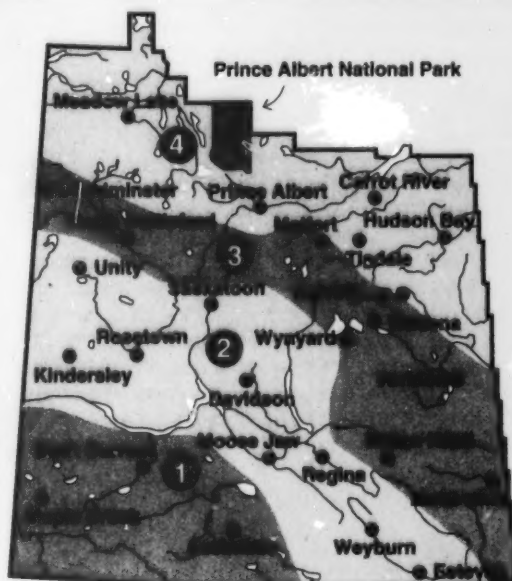


# Varieties of grain crops 2002



Saskatchewan  
Agriculture  
and Food

## Crop Production Areas



The cropland of Saskatchewan has been divided into four areas based roughly on climate, vegetation and soil type. The relative yields of crop varieties tend to vary from area to area. In choosing a variety, farmers will want to consider the yields in their area and special requirements such as early maturity, disease resistance or sawfly resistance.

**Area 1:** Drought is a definite hazard and high winds are common. Sawfly outbreaks often occur in this area. Cereal rust may be a problem in the southeastern section.

**Area 2:** Drought and sawflies may be problems in the western and central sections of the area. Cereal rust may be a problem in the southeastern section.

**Area 3:** Drought is not as likely to be a problem in this area, particularly in the east. Cereal rust may occur in the eastern portion. The frost-free period can be fairly short in the northwestern and northeastern sections.

**Area 4:** Rainfall is usually adequate for crop production. However, early fall frosts and wet harvest weather are frequent problems.

### Note About Dividing Lines:

The dividing lines do not represent distinct changes over a short distance. The change from one area to another is gradual.

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### Symbols Used in 2002 Seed Guide:

- ^ Variety may not be described in 2002
- Insufficient test data to describe
- ▲ Plant Breeders' Rights at time of printing
- ◆ Applied for PBR protection at time of printing

### Abbreviations used:

Relative maturity: VE = Very Early, E = Early, M = Medium, L = Late, VL = Very Late  
Resistance: VG = Very Good, G = Good, F = Fair, P = Poor, VP = Very Poor  
n/a = not applicable  
Seed size: S = Small, M = Medium, L = Large

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# Testing varieties in Saskatchewan

## By Saskatchewan Agriculture

The performance of crop varieties is tested regularly at a number of locations across Saskatchewan. Data from these trials are summarized and interpreted by the Saskatchewan Advisory Council on Grain Crops every year.

The trials are conducted by researchers from plant breeding institutions. The most recently registered varieties and promising experimental lines that might become registered are compared to standard varieties.

Wheat, oat, barley and flax varieties are grown at all locations, while canola, mustard, field pea, lentil, bean and chickpea are tested in those regions where they are best adapted. Information on sunflower production is received from trials conducted under the auspices of the Saskatchewan Sunflower Committee.

The reaction of varieties to diseases and seed treatment recommendations are updated and forwarded to the Grain Crops Council by pathologists who meet as members of the

Plant Disease Sub-council of the Council on Crop Protection.

Variety trials are grown both on farmers' fields and research stations. Multiple small plots of the various varieties are sown and harvested with small-scale press-drills and combines.

## Relative yield of varieties

Grain yield results from the interplay of genetic factors and non-genetic factors. Variety trials are designed to measure the differences among varieties that are due to genetic causes. It is important to minimize variability due to non-genetic factors such as soil type, nutrients, moisture, weeds, diseases, and other pests.

Experimental designs using replication (repeated plantings of the varieties) and randomization (the position of the varieties within the test are assigned by chance) are then used to estimate the precision with which the genetic factors can be measured. Yield potential of a variety is estimated by measuring the weight of grain produced per unit area.

Comparisons among varieties for yield potential involves an evaluation of both their absolute amounts of grain and their relative yield. Relative yield is the yield of one variety expressed as a percentage of a second variety.

Yields obtained in these trials are not identical to those obtained under commercial production conditions. However, the average yield for these varieties, obtained over a number of years at several locations, would remain in relatively the same ratio regardless of whether the grain yields were measured in small plots or large-scale fields.

Relative yields are the best estimates of expected yield advantage in the areas indicated. They are more reliable than estimates based on data from a single test or from a single location. Farmers should be aware, however, that actual yields within an area, or in a particular year, may vary substantially from the average figures reported because of natural variability.

## Relative Maturity

### Ratings

Relative maturity ratings are average number of days from seeding to swathing ripeness. The actual number of days to reach maturity depends on local climate and to some extent on management practices.

Some of the following tables express the relative maturity in days while others use a five category scale: **VE, E, M, L, and VL** (very early, early, medium, late, very late). Medium applies to the most widely grown check variety which appears at the top of each table. The limits for each category vary from crop to crop. In barley, for example, Harrington would be medium with L and E varieties

plus or minus 1-2 days, and VL and VE varieties beyond these.

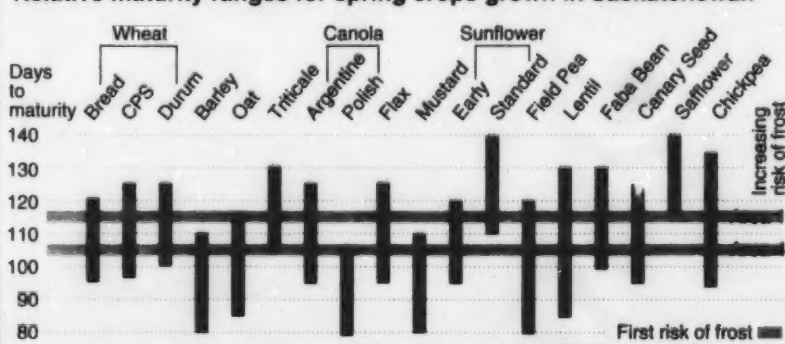
### Comparisons

The relative maturity of varieties of different crops is important when making plans for seeding.

The table below compares the relative maturity ranges for crops grown in Saskatchewan.

Maturity is measured from seeding to swathing ripeness. Within each crop there are early and late maturing varieties. Whether a crop matures before the first killing frost depends on seeding date, management practices and environment factors. Not all crops have a wide area of adaptation.

Relative maturity ranges for spring crops grown in Saskatchewan



Resistance to the most important diseases in western Canada is generally assessed in each crop before the variety is registered. The methods used to assess resistance in each crop are different. In some cases, spores of the pathogen are applied to plants in the greenhouse or in the field. In other cases, assessment is based on naturally occurring infection in the field. Each variety is rated on a five-point scale of very poor (VP), poor (P), fair (F), good (G), very good (VG). New varieties are not tested side-by-side with all existing varieties. Because of variation in disease levels from year to year, each new variety is assigned a rating relative to a few existing varieties that serve as disease level standards or checks.

Varieties differ in resistance because of differences in their genetic make-up and/or differences in the genetic make-up of the pathogen that causes the disease. However, the genetic make-up of a

pathogen can change over time, and overcome the resistance in a variety. In such cases, a variety with good resistance can quickly display poor resistance to a particular disease. Unfortunately, because not all varieties are tested side-by-side every year, the ratings of older varieties may be less reliable.

A number of factors can affect the level of disease symptoms observed at a given location in a given year. Environmental conditions such as moisture and temperature, the genetic make-up of both the variety and the pathogen, and the amount of the pathogen present can all affect the level of disease. Although a variety with good resistance can show disease symptoms under favourable conditions, a susceptible variety would have much more disease under the same conditions. For example, ascochyta blight of chickpea is a very aggressive fungal disease. It can completely kill susceptible varieties within two weeks

of symptoms first appearing. Current commercial chickpea varieties such as Sanford and Dwelley have some resistance to the disease. This resistance weakens as plant development nears the flowering stage. Cool, moist environmental conditions favour the disease, and if these conditions persist early in the growing season, the disease symptoms can occur much earlier than the flowering stage. This is especially true on chickpea grown outside the Brown Soil Zone (the area of best adaptation) or on heavy textured soils such as clays and clay loams. In these conditions, varieties such as Sanford and Dwelley do not show good resistance to ascochyta and can be defoliated, with girdled branches and dead plants. If conditions turn warm and dry, the diseased plants can re-grow from auxiliary nodes, often producing flowers and pods. However, these late pods and seeds will most likely be frozen in the first fall frost and have no commercial value.

## What is Plant Breeders' Rights

Plants Breeders' Rights provides a way to assure that companies and institutions that invest in plant breeding are able to keep reasonable control of their varieties and secure fair compensation for their efforts. This encourages additional investment in improved crop varieties for Canadian farmers.



Plants Breeders' Rights for crop variety developers are comparable in many ways to patent protection in other areas. When a plant breeder develops a new variety for use in Canada, he may apply under the Plant Breeders Rights Act to obtain certain controls over the multiplication and sale of the seed of that variety. Sale, trade or any other transfer of the seed for propagation purposes is prohibited by law without; 1) the written permission of the breeder or his agent and; 2) payment of a royalty to the breeder or his agent. Under PBR, farmers are allowed to save seed of the variety for their own use, on their own farms.

Varieties protected by Plant Breeders' Rights are identified with the PBR logo above.

Further information on Plant Breeders' Rights can be obtained from the Plant Breeders' Rights Office, tel. (613) 225-2342, fax (613) 228-6629.

# Cereal Crops

## Wheat

### Main characteristics of varieties

| Type & Variety                        | Years tested | Yield as % of Barrie |        |        |        |            | Relative maturity in days | Protein | Resistance to |            |           |           |           |            |      |    | Leaf spot | FHB |
|---------------------------------------|--------------|----------------------|--------|--------|--------|------------|---------------------------|---------|---------------|------------|-----------|-----------|-----------|------------|------|----|-----------|-----|
|                                       |              | Area 1               | Area 2 | Area 3 | Area 4 | Irrigation |                           |         | Lodging       | Shattering | Sprouting | Stem rust | Leaf rust | Loose smut | Bunt |    |           |     |
| Bread Wheat                           |              |                      |        |        |        |            |                           |         |               |            |           |           |           |            |      |    |           |     |
| AC Barrie                             | 9            | 100                  | 100    | 100    | 100    | 100        | 100                       | 14.8    | G             | G          | G         | G         | P         | G          | G    | P  | F         |     |
| AC Abbey                              | 7            | 99                   | 93     | 95     | 95     | 98         | -1                        | -0.8    | F             | G          | P         | G         | P         | F          | G    | P  | P         |     |
| CDC Bounty                            | 6            | 106                  | 104    | 107    | 108    | ---        | -1                        | -0.1    | F             | G          | F         | G         | F         | G          | F    | P  | F         |     |
| AC Cadillac                           | 7            | 100                  | 103    | 102    | 101    | 98         | -1                        | -0.2    | F             | G          | F         | G         | G         | VG         | VG   | P  | F         |     |
| Columbus                              | 5            | ---                  | 94     | 93     | ---    | 84         | +3                        | -0.2    | F             | F          | VG        | F         | P         | F          | VG   | P  | P         |     |
| AC Cora                               | 8            | 99                   | 97     | 94     | 95     | 92         | -2                        | -0.3    | F             | G          | F         | G         | VG        | G          | G    | P  | F         |     |
| AC Domain                             | 6            | 96                   | 94     | 94     | 86     | 89         | -2                        | +0.1    | G             | G          | VG        | G         | G         | VG         | F    | VP | P         |     |
| AC Eatonia                            | 7            | 92                   | 94     | 90     | 84     | ---        | 0                         | +0.2    | P             | G          | VG        | F         | P         | F          | G    | P  | --        |     |
| AC Elsa                               | 7            | 102                  | 104    | 105    | 98     | 97         | -1                        | -0.1    | F             | G          | F         | G         | G         | G          | G    | F  | P         |     |
| AC Intrepid                           | 7            | 101                  | 100    | 105    | 102    | 102        | -3                        | -0.3    | G             | G          | P         | G         | G         | F          | G    | P  | P         |     |
| Katepwa                               | 9            | 97                   | 94     | 92     | 93     | 89         | -2                        | -0.5    | F             | G          | F         | G         | VP        | G          | G    | P  | F         |     |
| Laura                                 | 8            | 100                  | 103    | 98     | 95     | 82         | +1                        | -0.4    | F             | G          | F         | G         | G         | F          | P    | P  | P         |     |
| AC Majestic                           | 8            | 93                   | 97     | 97     | 96     | 86         | +2                        | -0.2    | G             | F          | VG        | G         | P         | F          | VG   | F  | F         |     |
| McKenzie                              | 7            | 107                  | 105    | 102    | 96     | 109        | -2                        | -0.5    | F             | G          | G         | G         | VG        | VP         | VG   | P  | F         |     |
| Prodigy                               | 7            | 103                  | 104    | 106    | 99     | ---        | +1                        | +0.4    | G             | F          | G         | G         | G         | F          | VG   | P  | VP        |     |
| AC Splendor                           | 8            | 91                   | 92     | 95     | 92     | 89         | -4                        | +0.4    | F             | G          | F         | G         | G         | F          | G    | VP | P         |     |
| AC Superb                             | 5            | 113                  | 106    | 113    | 105    | ---        | +4                        | -0.3    | G             | G          | G         | G         | F         | F          | G    | VP | F         |     |
| CDC Teal                              | 7            | 98                   | 100    | 103    | 96     | 96         | -2                        | -0.1    | G             | G          | P         | G         | G         | G          | F    | P  | VP        |     |
| 5500HR                                | 4            | 97                   | 98     | 99     | 98     | ---        | +1                        | -0.4    | F             | G          | G         | F         | VG        | F          | VG   | P  | F         |     |
| 5600HR                                | 5            | 99                   | 100    | 99     | 102    | ---        | +2                        | -0.5    | G             | G          | G         | F         | VG        | VG         | VG   | P  | P         |     |
| Canada Prairie Spring - Red Seeded*   |              |                      |        |        |        |            |                           |         |               |            |           |           |           |            |      |    |           |     |
| AC Crystal                            | 9            | 119                  | 121    | 117    | 118    | 112        | +3                        |         | VG            | VG         | P         | G         | P         | F          | G    | F  | VP        |     |
| AC Foremost                           | 5            | 119                  | 122    | 118    | 116    | 109        | +2                        |         | G             | G          | F         | G         | P         | F          | G    | P  | VP        |     |
| AC Taber                              | 5            | 117                  | 122    | 118    | 114    | 116        | +4                        |         | VG            | VG         | P         | G         | F         | P          | G    | F  | VP        |     |
| 5700PR                                | 5            | 118                  | 119    | 122    | 123    | 120        | +2                        |         | VG            | G          | P         | G         | F         | F          | VG   | P  | P         |     |
| Canada Prairie Spring - White Seeded* |              |                      |        |        |        |            |                           |         |               |            |           |           |           |            |      |    |           |     |
| AC Karma                              | 8            | 117                  | 122    | 119    | 121    | 110        | +2                        |         | G             | G          | P         | G         | P         | F          | G    | P  | P         |     |
| AC Vista                              | 9            | 120                  | 125    | 125    | 121    | 116        | +1                        |         | G             | G          | F         | G         | P         | G          | G    | P  | VP        |     |
| AC2000                                | 5            | 109                  | 111    | 108    | 109    | 103        | +3                        |         | G             | G          | F         | F         | P         | F          | G    | P  | P         |     |
| Hard White Wheat                      |              |                      |        |        |        |            |                           |         |               |            |           |           |           |            |      |    |           |     |
| AC Ivory                              | 4            | 96                   | 90     | 92     | 92     | ---        | -2                        |         | G             | G          | G         | F         | G         | F          | P    | P  | F         |     |
| AC Snowbird                           | 4            | 103                  | 97     | 105    | 102    | ---        | +2                        |         | G             | G          | G         | G         | VG        | G          | F    | P  | F         |     |
| Canada Western Extra Strong*          |              |                      |        |        |        |            |                           |         |               |            |           |           |           |            |      |    |           |     |
| Amazon                                | 6            | 102                  | 104    | 109    | 111    | ---        | +2                        |         | F             | G          | P         | G         | G         | VG         | F    | F  | P         |     |
| AC Corinne                            | 6            | 99                   | 102    | 103    | 110    | ---        | +3                        |         | F             | G          | G         | G         | G         | VG         | F    | P  | P         |     |
| AC Glenavon                           | 6            | 101                  | 105    | 108    | 115    | ---        | +2                        |         | F             | G          | --        | G         | G         | VG         | F    | P  | P         |     |
| Glenlea                               | 8            | 102                  | 105    | 108    | 112    | ---        | +2                        |         | F             | G          | P         | G         | F         | VG         | F    | P  | P         |     |
| Laser                                 | 6            | 97                   | 103    | 104    | 101    | 92         | -1                        |         | F             | G          | P         | P         | P         | VG         | VP   | P  | P         |     |
| Durum                                 |              |                      |        |        |        |            |                           |         |               |            |           |           |           |            |      |    |           |     |
| Kyle                                  | 12           | 100                  | 100    | 100    | 100    | 100        | +3                        | 13.8    | P             | VG         | F         | VG        | VG        | P          | VG   | P  | VP        |     |
| AC Avonlea                            | 8            | 105                  | 106    | 109    | --     | 108        | +2                        | +0.1    | F             | VG         | F         | VG        | VG        | P          | VG   | P  | VP        |     |
| AC Melita                             | 6            | 95                   | 96     | 101    | --     | 110        | +1                        | -0.2    | F             | VG         | F         | VG        | VG        | P          | VG   | VP | VP        |     |
| AC Morse                              | 8            | 103                  | 102    | 109    | --     | 111        | +3                        | -0.1    | G             | VG         | F         | VG        | VG        | VP         | VG   | VP | VP        |     |
| AC Napoleon                           | 5            | 104                  | 104    | 109    | --     | --         | +2                        | -0.4    | F             | VG         | --        | VG        | VG        | P          | VG   | P  | VP        |     |
| AC Navigator                          | 6            | 104                  | 101    | 97     | --     | --         | +3                        | -0.4    | G             | VG         | F         | VG        | VG        | VP         | VG   | VP | VP        |     |
| Plenty                                | 12           | 101                  | 106    | 107    | --     | 109        | +2                        | -0.1    | F             | VG         | F         | VG        | VG        | P          | VG   | F  | VP        |     |
| Sceptre                               | 11           | 96                   | 97     | 99     | 103    | 112        | 0                         | -0.6    | G             | VG         | P         | VG        | VG        | P          | VG   | P  | VP        |     |

\* Includes direct and indirect comparisons with AC Barrie

## Wheat (Cont'd)

### Additional Information

All varieties of common wheat are compared to **AC Barrie**.

Several new races of leaf rust capable of overcoming leaf rust resistance gene Lr 16 have multiplied rapidly. If varieties rated poor or very poor for leaf rust are sown in southeastern Saskatchewan, early seeding may minimize risk of crop losses.

Durum wheat varieties are more susceptible than CWRS varieties to Fusarium Head Blight and CPS varieties are intermediate.

All varieties have moderately good resistance to common root rot.

Seed of varieties rated poor and very poor for bunt and loose smut should be treated. Please refer to the Seed Facts section of this pamphlet or the *Guide to Crop Protection 2002*.

Most of the varieties have been rated for their relative resistance to pre-harvest sprouting. During wet harvest weather grades drop more rapidly due to sprouting in swathed than in standing crops.

### Canada Western Red Spring Wheat

Seed of the new varieties **5600HR** and **AC Superb** will not be available in 2002.

Limited quantities of seed of the new varieties **CDC Bounty** and **5500HR** will be available in 2002.

**AC Abbey** is resistant to the wheat stem sawfly, has semidwarf stature and an awned head.

**AC Cadillac** and **CDC Bounty** have a large seed size and an exceptionally heavy test weight.

**AC Eatonla** is resistant to wheat stem sawfly. **McKenzie** has an awned head and may also be identified by a purplish stem.

**Prodigy** has an awned head and exceptionally heavy test weight. **AC Superb** has an awned head and very large seeds.

### Canada Prairie Spring Wheat

**AC Karma**, **AC Vista**, **AC Crystal**, and **AC Foremost** have resistance to loose smut, except the new race T9. In order to prevent the spread of this new race, all Canada Prairie Spring seed produced in northeastern Saskatchewan should be treated with a systemic fungicide. Please refer to the Seed Facts section or to the *Crop Protection Guide 2002*.

**AC Vista** and **AC2000** have higher protein content, and stronger gluten than **AC Karma**. Limited quantities of seed of **AC2000** and **5700HR** will be available in 2002.

**AC Crystal** and **5700HR** have improved quality compared to **AC Foremost** and **AC Taber**.

### Canada Western Extra Strong

Limited quantities of **Amazon**, **AC Corinne** and **AC Glenavon** will be available in 2002.

**Laser** has weaker gluten strength than **Glenlea**. **Laser** is proposed for deregistration in 2004.

### Canada Western Amber Durum

All durum varieties are susceptible to two new races of loose smut. Seed can be treated to provide control. See the Seed Facts section for details.

**Kyle** receives better grades than other varieties even under adverse harvesting conditions.

**AC Avonlea** has shorter stronger straw than **Kyle**. **AC Avonlea** has higher pigment content in the grain than other varieties.

**AC Morse** has short strong straw like **Sceptre**, and has lower test weight than **Kyle**.

**AC Napoleon** has shorter and stronger straw than **Kyle** and low test weight.

Under some conditions, the stems of **Plenty** break off near ground level.

**AC Navigator** has extra strong

gluten properties and semidwarf stature. It may be grown only under contract with the Canadian Wheat Board and Saskatchewan Wheat Pool.

### Soft White Spring Wheat

**AC Reed** and **AC Phil** are moderately resistant to shattering, powdery mildew, and common root rot, moderately susceptible to leaf and stem rust, and susceptible to common bunt. **AC Phil**, generally, has less black point than **AC Reed** and **Fielder**. **AC Nanda** has improved resistance to common bunt, powdery mildew, and black point. It yields about the same as **Fielder** and is 2 days later maturing. Limited seed of **AC Nanda** will be available in 2002. Soft-white spring wheats are susceptible to pre-harvest sprouting.

## Winter Wheat

### Main characteristics of varieties

| Variety        | Years tested | Grain yield as % of CDC Kestrel— |             |            |  | Protein | Lodging | Winter Damage | Resistance to |           |      |
|----------------|--------------|----------------------------------|-------------|------------|--|---------|---------|---------------|---------------|-----------|------|
|                |              | Areas 1 & 2                      | Areas 3 & 4 | Irrigation |  |         |         |               | Stem Rust     | Leaf Rust | Bunt |
| CDC Kestrel    | 11           | 100                              | 100         | 100        |  | 10.8    | G       | G             | P             | P         | P    |
| AC Bellatrix   | 3            | 101                              | ---         | ---        |  | 12.2    | G       | G             | VP            | P         | G    |
| CDC Clair      | 11           | 104                              | 103         | 94         |  | 11.7    | G       | G             | P             | P         | P    |
| CDC Osprey     | 11           | 100                              | 103         | 90         |  | 11.8    | G       | G             | P             | P         | P    |
| CDC Harrier    | 8            | 103                              | 100         | 104        |  | 11.1    | G       | G             | G             | P         | P    |
| CDC Falcon     | 7            | 101                              | 95          | 111        |  | 11.9    | VG      | G             | VG            | G         | P    |
| CDC Raptor     | 6            | 102                              | 99          | 107        |  | 11.8    | VG      | G             | VG            | G         | P    |
| CDC Ptarmigan* | 6            | 116                              | 108         | ---        |  | 9.8     | G       | F             | VP            | P         | P    |

**CDC Ptarmigan** is a soft white winter wheat. All other cultivars belong to the hard red winter wheat class.

## Rye

### Main characteristics of varieties

| Variety      | Years tested | Yield as % of Prima— |        |        |        | Maturity | Resistance to  |            |         |           |
|--------------|--------------|----------------------|--------|--------|--------|----------|----------------|------------|---------|-----------|
|              |              | Area 1               | Area 2 | Area 3 | Area 4 |          | Winter Killing | Shattering | Lodging | Stem Smut |
| Prima        | 12           | 100                  | 100    | 100    | 100    | M        | VG             | F          | F       | G         |
| AC Rifle     | 12           | 112                  | 95     | 93     | ---    | M        | VG             | VG         | VG      | G         |
| AC Remington | 3            | 128                  | 100    | 99     | ---    | M        | VG             | VG         | G       | ---       |

### Additional Information:

**Gazelle** is a registered variety of spring rye. **Danko** and **Kodiak** are very susceptible to winter killing in Saskatchewan and therefore should only be considered for production using some form of tillage conservation.

## Triticale

### Main characteristics of varieties

| Variety   | Years tested | Yield as % of AC Certa— |        |        |        |      | Test wt. (kg/hl) | Maturity | Resistance to |           |           |      |          |
|-----------|--------------|-------------------------|--------|--------|--------|------|------------------|----------|---------------|-----------|-----------|------|----------|
|           |              | Area 1                  | Area 2 | Area 3 | Area 4 | Irr* |                  |          | Lodging       | Stem rust | Leaf rust | Bunt | Root rot |
| AC Certa  | 10           | 100                     | 100    | 100    | ---    | 100  | 74               | M        | G             | VG        | VG        | VG   | G        |
| AC Alta   | 10           | 104                     | 104    | 99     | ---    | 109  | 68               | L        | G             | VG        | VG        | VG   | F        |
| AC Copia  | 10           | 99                      | 99     | 95     | ---    | 99   | 72               | M        | G             | VG        | VG        | VG   | F        |
| Pronghorn | 10           | 99                      | 102    | 102    | ---    | 107  | 69               | E        | G             | VG        | VG        | VG   | F        |
| Sandro    | 7            | 104                     | 101    | 95     | ---    | ---  | 73               | E        | G             | VG        | VG        | VG   | G        |
| AC Ultima | 6            | 105                     | 104    | 103    | ---    | ---  | 70               | E        | G             | VG        | VG        | VG   | F        |

\* Relative yield under irrigation is based on limited data.

### Additional Information

Triticale matures 2-3 days later than **AC Taber** CPS wheat, therefore it should be planted as early as possible. Some cultivars of triticale will mature very late in Area 4. The seeding rate for triticale should be at least 30 percent more than that of CWRS wheat to obtain the same number of plants per square foot. Susceptibility to Fusarium Head Blight is at least as great in triticale as in wheat. **AC Ultima** is a new cultivar of spring triticale. It has improved Hagberg Falling Number.

Winter triticale has winter hardiness equal to that of winter wheat. **Bobcat** is a new cultivar of winter triticale. It is awnletted with shorter and stronger straw than **Pika**. Seed of **Bobcat** will be available in 2002.

# Wheat Stem Sawfly

**Area of Infestation:** In 2001 sawfly (*Cephus cinctus* Nort.) damage to wheat occurred over a large area in south central Saskatchewan and southern Alberta and as far north as Unity and Wilkie. Sawfly are expected to be a major pest again in 2002.

**Symptoms:** The wheat appears to be lodged. On close examination, the stems are cut at ground level or detach easily when tugged. A stem split lengthwise reveals an abundance of frass, powdery waste from the sawfly. The subcrown internode contains the sawfly larva in its cocoon.

**Life Cycle:** To survive the winter, the larva spins its cocoon in the wheat stem below the soil surface. Mid June to mid-July the following year, the sawfly emerge as a wasp-like insect. It finds a tender elongating portion of a wheat stem, saws a tiny hole, and lays an egg inside the wall. The egg hatches and the larva

## Sawfly Control

### Resistant Varieties:

**CWRS** Two solid stem varieties are available, **AC Eatonia** and **AC Abbey**

Sawfly feed easily throughout the length of regular hollow stem varieties. Sawfly resistant varieties have solid stems that are filled with pith, especially in the lower part. The pith slows the movement of the sawfly larvae, many dying before they reach the sub-crown internode. As a result, there is much less cutting in sawfly resistant varieties. The reduction in cutting also depends on the growing season. Formation of pith is depressed when the conditions during stem growth are cloudy. Under those conditions a 'solid stem' variety may have more cutting than desirable.

**Considerations for Use of Resistant Varieties** Sawfly resistant varieties are lower yielding than hollow

reduced, then grow a hollow stem variety until an increase in cutting is observed.

**Border Planting of Resistant Variety** Sawfly inhabit the native grasses in uncultivated areas around a field. If the source of sawfly is adjacent uncultivated land or an adjacent wheat field, a border of a sawfly resistant variety may be planted around a field containing a non-resistant variety. The border should be from the same wheat class. The sawfly is a weak flyer so most will lay their eggs in this border strip which reduces the damage to the non-resistant variety.

**Mixtures** of resistant and non-resistant wheat varieties may be tried.

**Durum** Another consideration may be to grow durum wheat which is generally cut less by the sawfly than hollow stemmed wheats. In 2001, durum wheat was cut almost as severely as hollowed stemmed wheat in some areas.

### Agronomic Practices:

Sawfly damage can be reduced by:

- delayed planting
- swathing before the stems are cut
- fall cultivation brings the plugs to the surface where they are dried out, and buries others too deep for the sawfly to emerge.
- using pick-up reels
- tillage
- summerfallow
- burning
- crop rotations with non-host crops such as lentils, peas, canola, mustard, oats, barley and rye. Barley and rye can be slightly infected.

**Insecticide:** Insecticides are not effective in controlling sawfly.

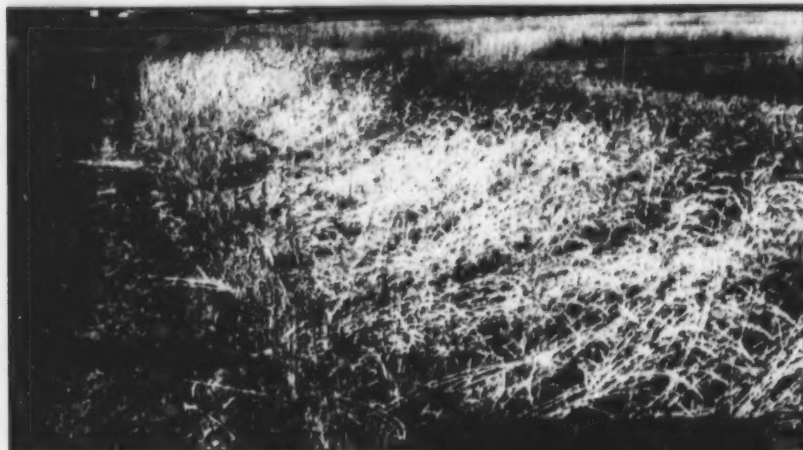
**Parasite:** The natural parasite, *Braccon cephi*, eats the larvae. A build-up of the parasite reduces sawfly damage and plugs available for the next growing season. The problem is that the parasite takes a couple of seasons to build up, and the sawfly damage is already taking its toll.

### Websites:

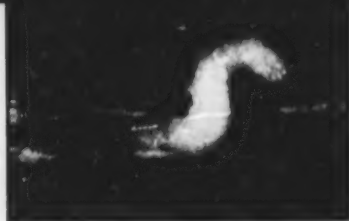
<http://www.gov.mb.ca/agriculture/crops/insects/fad20s00.html>

<http://itsd-s3.agric.gov.ab.ca/pests/insects/62010240.html>

<http://www.agr.gov.sk.ca>



Above: A crop with sawfly damage  
Right: Sawfly larva with characteristic 'S' shape.



feeds on the inside wall of the stem. At maturity the larva girdles the stem above the sub-crown internode. The larva makes a plug in the stem just below the cut on the stem, and encloses itself in a cocoon.

**Damage:** Girdling weakens the stem so it easily falls over, making it difficult to harvest which results in a yield loss. Another source of yield loss is from the sawfly feeding on the inside of the stem which reduces the number of seeds per head and seed plumpness.

stem varieties. The farmer must weigh potential income loss from sawfly damage of hollow stem cultivars against the financial loss from growing a lower yielding sawfly-resistant variety.

**Alternate varieties:** A sawfly resistant variety may be grown on a field until the sawfly level is

## Malting Barley

### Main characteristics of varieties

| Main characteristics of varieties          |              |            |                      |                            |        |        |        |                           |         |         | Resistance to |       |            |             |          |           |                        |  |
|--------------------------------------------|--------------|------------|----------------------|----------------------------|--------|--------|--------|---------------------------|---------|---------|---------------|-------|------------|-------------|----------|-----------|------------------------|--|
| Category† and variety                      | Years tested | 2 or 6 row | Rough or smooth awns | —Yield as % of Harrington— |        |        |        | Relative maturity rating* | Straw†† | Lodging | Net blotch    | Scald | Loose smut | Other smuts | Root rot | Stem rust | Fusarium** Head Blight |  |
|                                            |              |            |                      | Area 1                     | Area 2 | Area 3 | Area 4 |                           |         |         |               |       |            |             |          |           |                        |  |
| <b>Malting acceptance: Recommended</b>     |              |            |                      |                            |        |        |        |                           |         |         |               |       |            |             |          |           |                        |  |
| Harrington                                 | 15           | 2          | R                    | 100                        | 100    | 100    | 100    | M                         | N       | F       | VP            | P     | P          | P           | F        | P         | F+                     |  |
| CDC Kendall                                | 9            | 2          | R                    | 101                        | 112    | 115    | 118    | M                         | N       | G       | F             | P     | P          | P           | F        | G         | F+                     |  |
| Merit ●                                    | 7            | 2          | R                    | 107                        | 125    | 127    | 125    | L                         | N       | F       | F             | P     | P          | G           | F        | G         | F                      |  |
| AC Metcalfe ●                              | 9            | 2          | R                    | 102                        | 110    | 113    | 116    | M                         | N       | G       | F             | P     | VG         | F           | F        | G         | F+                     |  |
| Stein                                      | 14           | 2          | R                    | 105                        | 107    | 113    | 115    | M                         | N       | F       | F             | P     | P          | G           | P        | G         | F                      |  |
| CDC Stratus                                | 9            | 2          | R                    | 101                        | 114    | 118    | 120    | M                         | N       | G       | F             | P     | F          | F           | F        | G         | F+                     |  |
| B1602                                      | 10           | 6          | R                    | 89                         | 107    | 107    | 116    | M                         | N       | G       | F             | P     | P          | G           | VG       | G         | VP                     |  |
| Excel                                      | 7            | 6          | S                    | 101                        | 114    | 120    | 120    | M                         | N       | VG      | F             | P     | P          | G           | G        | G         | VP                     |  |
| Robust                                     | 6            | 6          | S                    | 88                         | 105    | 111    | 108    | M                         | N       | G       | F             | P     | P          | F           | G        | G         | VP                     |  |
| CDC Sisler ●                               | 7            | 6          | S                    | 99                         | 114    | 121    | 118    | M                         | N       | F       | P             | P     | P          | P           | F        | G         | P                      |  |
| <b>Malting acceptance: Limited</b>         |              |            |                      |                            |        |        |        |                           |         |         |               |       |            |             |          |           |                        |  |
| Legacy ●                                   | 3            | 6          | S                    | 107                        | 111    | 110    | 122    | M                         | N       | G       | F             | P     | P          | F           | G        | G         | VP                     |  |
| <b>Malting acceptance: Not Recommended</b> |              |            |                      |                            |        |        |        |                           |         |         |               |       |            |             |          |           |                        |  |
| Manley^                                    | 15           | 2          | R                    | 107                        | 111    | 115    | 118    | L                         | N       | G       | F             | P     | P          | VG          | F        | G         | F                      |  |
| <b>Malting acceptance: Under Test</b>      |              |            |                      |                            |        |        |        |                           |         |         |               |       |            |             |          |           |                        |  |
| AC Bountiful                               | 8            | 2          | R                    | 106                        | 115    | 122    | 120    | M                         | N       | G       | G             | P     | VG         | VG          | F        | G         | F+                     |  |
| CDC Copeland ●                             | 5            | 2          | R                    | 109                        | 120    | 124    | 126    | M                         | N       | G       | F             | P     | P          | F           | F        | F         | F+                     |  |
| Newdale ●                                  | 3            | 2          | R                    | 120                        | 127    | 125    | 136    | M                         | N       | G       | F             | P     | P          | F           | F        | G         | F                      |  |
| CDC Select ●                               | 4            | 2          | R                    | 105                        | 118    | 115    | 126    | M                         | N       | G       | F             | P     | F          | F           | F        | F         | P                      |  |
| CDC Battleford ●                           | 3            | 6          | S                    | 111                        | 122    | 122    | 136    | M                         | N       | G       | G             | P     | VP         | G           | F        | G         | P                      |  |
| CDC Yorkton ●                              | 5            | 6          | S                    | 97                         | 113    | 124    | 132    | M                         | N       | G       | G             | P     | P          | G           | F        | G         | P                      |  |

\* Relative maturity: The relative maturity of the check, Harrington, is M (on average, 91 days from seeding to swathing ripeness)

\*\* F+ indicates that these lines have superior resistance to those rated F but not good enough to rate G.

† These categories are established annually by the Malting Barley Industry Group (Call 1-800-275-4292 for more information)

†† N = normal, SD = semi-dwarf

### Lines Under Evaluation of Malting and Brewing Quality

Small scale tests are a good measure of malting potential but are not sufficient to determine the commercial acceptability of malting varieties. Final acceptance is given only after two years of successful plant scale evaluation. Several carload lots of barley are malted and subsequently brewed. The beer is then given the ultimate test — a taste panel. This process will normally take a minimum of three years. A crop grown in 2002 will be malted in January-February, 2003. It will be brewed in May-June, 2003, aged and tasted in October-November 2003.

### Additional Information:

Growers are reminded that the industry is cautious about using new varieties.

Growers are cautioned that malting varieties, especially two rows, are very susceptible to sprouting.

# Recommended Malting Barley Varieties

## From the Malting Barley Industry Group

# 2002-03

Recommendations are based on anticipated markets in 2002-03. These recommendations are one source of information used to decide whether to grow a variety of malting barley. Other important considerations are disease resistance and the suitability of a variety's agronomic characteristics in a farming area. Consult your provincial agriculture representative and talk to your elevator manager about local market demand for particular varieties.

### TWO-ROW

| Variety     | Not Recommended | Comments                                             |
|-------------|-----------------|------------------------------------------------------|
| AC Metcalfe |                 | Widely accepted domestically and for export          |
| Harrington  |                 | Reduced demand                                       |
| CDC Kendall |                 | Expanding domestic markets; potential export markets |
| Stein       |                 | Established export markets                           |
| CDC Stratus |                 | Expanding domestic markets; potential export markets |
| Merit       |                 | Limited domestic markets; expanding export markets   |
| B1202       |                 | Limited domestic and export markets                  |
| Manley      |                 |                                                      |

The varieties AC Bountiful (TR243) and CDC Copeland (TR150) are not being grown for the commercial market. Limited quantities are being grown for market development and testing purposes.

### SIX-ROW

| Variety    | Not Recommended | Comments                                         |
|------------|-----------------|--------------------------------------------------|
| Excel      |                 | Reduced demand                                   |
| Robust     |                 | Established demand                               |
| B1602      |                 | Established demand                               |
| CDC Sisler |                 | Growing domestic demand                          |
| Legacy     |                 | Growing export demand; potential domestic demand |

The varieties CDC Yorkton (BT459) and CDC Battleford (BT456) are not being grown for the commercial market. Limited quantities are being grown for market development and testing purposes.

#### Recommended

#### Limited

#### Not Recommended

Varieties that have no known commercial market demand for malting and brewing

In **Limited** cases, some acreage is required. Growers should only grow these varieties if they received a commitment from a local elevator, a company with proprietary rights to those varieties or a maltster that is selecting this variety.

Varieties selected for domestic use, 2000-01  
(1 095 150 tonnes delivered)



Varieties selected for export, 2000-01  
(1 328 350 tonnes delivered)



#### Malting Barley Industry Group

#### Questions?

Agricare, Brewing and Malting Barley Research Institute, Busch Agricultural Resources Inc., Canada Malting Co. Ltd., Canadian Grain Commission, Canadian Malting Barley Technical Centre, Canadian Wheat Board, Cargill Ltd., ConAgra Grain, Dominion Malting Ltd., James Richardson International, Louis Dreyfus Canada Ltd., N.M. Paterson & Sons Ltd., North East Terminal, Parrish & Heimbecker Ltd., Pioneer Grain Company Ltd., Prairie Malt Ltd., Saskatchewan Wheat Pool, South West Terminal, UGG, Westcan Malting Ltd., Western Barley Growers Association, XCAN Grain Pool Ltd.

Call your selector or handling company. Or call the CWB at: 1-800-ASK-4-CWB (1-800-275-4292)

# Feed and Food Barley

## Main characteristics of varieties

| Category and variety        | Years tested | 2 or 6 row | Rough or smooth awns | Yield as % of Harrington— |        |        |        | Relative maturity rating* | Straw† | Lodging | Resistance to— |       |            |             |          |           |                        |  |
|-----------------------------|--------------|------------|----------------------|---------------------------|--------|--------|--------|---------------------------|--------|---------|----------------|-------|------------|-------------|----------|-----------|------------------------|--|
|                             |              |            |                      | Area 1                    | Area 2 | Area 3 | Area 4 |                           |        |         | Net blotch     | Scald | Loose smut | Other smuts | Root rot | Stem rust | Fusarium** Head Blight |  |
|                             |              |            |                      |                           |        |        |        |                           |        |         |                |       |            |             |          |           |                        |  |
| <b>Feed</b>                 |              |            |                      |                           |        |        |        |                           |        |         |                |       |            |             |          |           |                        |  |
| CDC Dolly                   | 8            | 2          | R                    | 107                       | 114    | 118    | 118    | M                         | N      | G       | P              | G     | P          | G           | F        | G         | F+                     |  |
| CDC Fleet                   | 9            | 2          | R                    | 89                        | 97     | 101    | 102    | VE                        | N      | VG      | F              | G     | P          | VP          | P        | G         | F                      |  |
| CDC Helgason                | 1            | 2          | R                    | 108                       | 119    | 120    | 123    | M                         | N      | G       | G              | P     | VG         | G           | F        | F         | P                      |  |
| Xena                        | 5            | 2          | R                    | 112                       | 126    | 135    | 130    | M                         | N      | G       | F              | P     | P          | VG          | F        | G         | F                      |  |
| Brier^                      | 11           | 6          | S                    | 102                       | 119    | 102    | 129    | M                         | N      | F       | G              | F     | P          | VG          | VP       | G         | P                      |  |
| AC Harper                   | 9            | 6          | S                    | 104                       | 116    | 121    | 117    | M                         | N      | G       | F              | G     | P          | F           | F        | G         | VP                     |  |
| AC Lacombe                  | 11           | 6          | S                    | 101                       | 117    | 120    | 121    | M                         | N      | G       | F              | F     | P          | VG          | F        | G         | VP                     |  |
| AC Rosser                   | 9            | 6          | S                    | 110                       | 128    | 133    | 134    | M                         | N      | G       | F              | VP    | P          | VG          | G        | G         | VP                     |  |
| Stander                     | 9            | 6          | S                    | 94                        | 116    | 124    | 128    | M                         | N      | VG      | F              | P     | P          | P           | G        | G         | VP                     |  |
| Trochu                      | 4            | 6          | S                    | 93                        | 118    | 126    | 138    | M                         | N      | F       | P              | F     | P          | G           | G        | G         | VP                     |  |
| <b>Hulless</b>              |              |            |                      |                           |        |        |        |                           |        |         |                |       |            |             |          |           |                        |  |
| CDC Dawn                    | 9            | 2          | R                    | 98                        | 105    | 121    | 104    | M                         | N      | F       | F              | G     | P          | F           | F        | G         | F                      |  |
| CDC Freedom                 | 7            | 2          | R                    | 90                        | 100    | 104    | 102    | M                         | N      | G       | F              | P     | —          | G           | P        | G         | F+                     |  |
| CDC Gainer                  | 8            | 2          | R                    | 87                        | 97     | 101    | 101    | M                         | N      | F       | F              | G     | P          | F           | F        | G         | P                      |  |
| HB 805                      | 3            | 2          | R                    | 95                        | 108    | 113    | 108    | L                         | N      | F       | F              | P     | F          | G           | F        | F         | —                      |  |
| CDC McGwire                 | 6            | 2          | R                    | 97                        | 111    | 112    | 114    | M                         | N      | G       | VG             | G     | P          | G           | G        | F         | F                      |  |
| Phoenix                     | 9            | 2          | R                    | 82                        | 93     | 88     | —      | M                         | N      | G       | P              | P     | P          | F           | G        | P         | F                      |  |
| CDC Speedy                  | 3            | 2          | R                    | 73                        | 91     | 103    | 93     | VE                        | N      | G       | F              | G     | P          | P           | F        | G         | F+                     |  |
| Tercel                      | 8            | 2          | R                    | 90                        | 95     | 98     | 99     | M                         | N      | F       | P              | P     | P          | F           | F        | G         | P                      |  |
| AC Bacon                    | 7            | 6          | R                    | 86                        | 108    | 112    | 110    | M                         | N      | G       | P              | G     | P          | F           | F        | G         | P                      |  |
| Falcon                      | 9            | 6          | S                    | 70                        | 90     | 88     | 95     | M                         | SD     | VG      | F              | G     | P          | F           | F        | G         | VP                     |  |
| Peregrine                   | 5            | 6          | R                    | 71                        | 80     | 87     | 90     | M                         | SD     | VG      | F              | F     | P          | P           | G        | G         | VP                     |  |
| CDC Silky^                  | 9            | 6          | S                    | 84                        | 102    | 101    | 105    | M                         | SD     | VG      | F              | G     | P          | F           | G        | G         | P                      |  |
| <b>Intensive Management</b> |              |            |                      |                           |        |        |        |                           |        |         |                |       |            |             |          |           |                        |  |
| CDC Bold                    | 4            | 2          | R                    | 115                       | 126    | 130    | 133    | L                         | SD     | G       | P              | G     | P          | VG          | G        | G         | P                      |  |
| CDC Thompson                | 9            | 2          | R                    | 89                        | 98     | 97     | 101    | VE                        | SD     | VG      | F              | G     | F          | F           | F        | G         | F                      |  |
| CDC Earl                    | 9            | 6          | R                    | 97                        | 111    | 110    | 120    | L                         | SD     | VG      | G              | G     | P          | G           | G        | G         | VP                     |  |
| Kasota                      | 7            | 6          | S                    | 97                        | 106    | 109    | 108    | E                         | SD     | G       | F              | G     | P          | G           | P        | G         | VP                     |  |
| Mahigan                     | 7            | 6          | S                    | 105                       | 112    | 114    | 115    | E                         | SD     | VG      | F              | G     | P          | G           | P        | G         | VP                     |  |
| Niska                       | 5            | 6          | S                    | 103                       | 120    | 127    | 134    | L                         | SD     | F       | P              | P     | P          | G           | P        | G         | VP                     |  |
| Vivar                       | 4            | 6          | R                    | 110                       | 118    | 120    | 136    | L                         | SD     | G       | F              | P     | F          | G           | F        | G         | VP                     |  |

\* Relative maturity: The relative maturity of the check, Harrington, is M (on average, 91 days from seeding to swathing ripeness).

\*\* F+ indicates that these lines have superior resistance to those rated F but not good enough to rate G.

† : N = normal, SD = semi-dwarf.

### Feed and Food Barley (Cont'd)

**Hulless:** In hulless varieties the hull is left in the field, therefore, comparable yields are 9-12 percent lower. Hulless seed is more susceptible to damage than hulled seed, so handling should be minimized.

**Hulless Waxy:** CDC Candle, HB803 and Merlin are waxy starch varieties for specialty markets. For further information contact Agricore United.

**Irrigation:** Under irrigation, disease resistance, straw strength and maturity are more critical. Growers should select early, strong-strawed, disease resistant varieties and should consider semi-dwarf varieties.

**General Comments:** A race of stem rust which attacks all of our previously resistant varieties is present in the eastern prairies and the northern great plains. This race has not reached high levels but if conditions are favorable, it could become a problem. Early sowing is the only practical measure which can be taken at this time.

Of the current two-rowed varieties, only **CDC McGwire** has good field resistance to all races of net blotch. Therefore, growers who must plant barley on barley stubble should either select six-rowed varieties which are more tolerant or the above mentioned two-rowed variety.

Most of the available varieties are susceptible to one or more types of smut. Therefore, seed should be treated on a regular basis.

Harvesting grain over 16 percent moisture and then using aeration bins for drying can lead to sprouting and embryo death. Seed with reduced germination is undesirable for seeding or malting purposes.

Two-rowed barley varieties are generally more resistant to shattering than are six-row varieties.

### Forage Barley:

AC Ranger, AC Hawkeye and Westford are six-row varieties marketed as forage barley.

## Oat

### Main characteristics of varieties

| Variety          | Years tested | — Yield as % of Calibre — |        |        |        | Test wt. (g/0.5L) | % Hull | % Plump | Maturity rating* | Lodging | Resistance to |           |      |
|------------------|--------------|---------------------------|--------|--------|--------|-------------------|--------|---------|------------------|---------|---------------|-----------|------|
|                  |              | Area 1                    | Area 2 | Area 3 | Area 4 |                   |        |         |                  |         | Stem rust     | Leaf rust | Smut |
| Calibre          | 13           | 100                       | 100    | 100    | 100    | 250               | 22.9   | 44      | M                | G       | VP            | VP        | P    |
| AC Antoine *     | 4            | 99                        | 100    | 101    | 93     | 243               | 23.2   | 25      | E                | P       | VP            | VP        | F    |
| AC Assiniboia #  | 10           | 94                        | 99     | 96     | 93     | 240               | 22.9   | 74      | M                | VG      | VG            | VG        | VG   |
| Boudrias #       | 3            | —                         | 90     | 89     | —      | 263               | n/a    | 16      | L                | G       | VG            | VG        | VG   |
| CDC Boyer        | 11           | 99                        | 104    | 100    | 99     | 236               | 22.6   | 81      | E                | G       | VG            | F         | P    |
| CDC Dancer #     | 4            | 101                       | 106    | 101    | 94     | 257               | 19.2   | 80      | M                | G       | VG            | VP        | VG   |
| Derby            | 13           | 100                       | 101    | 103    | 103    | 251               | 22.2   | 74      | M                | G       | VP            | VP        | P    |
| SW Exactor #     | 5            | 93                        | 109    | 106    | 100    | 241               | 25.0   | 44      | L                | VG      | VP            | VP        | F    |
| AC Gwen #        | 4            | 67                        | 75     | 76     | 67     | 278               | n/a    | 11      | L                | G       | VG            | VG        | VG   |
| Kaufmann #       | 4            | 95                        | 100    | 96     | 80     | 250               | 22.1   | 85      | L                | F       | VG            | VG        | VG   |
| AC Medallion # ^ | 9            | 100                       | 105    | 101    | 96     | 241               | 24.1   | 71      | L                | P       | VG            | VG        | VG   |
| AC Morgan #      | 5            | 103                       | 113    | 110    | 111    | 242               | 24.2   | 63      | M                | VG      | VP            | VP        | F    |
| CDC Pacer        | 8            | 101                       | 109    | 108    | 102    | 245               | 23.7   | 71      | M                | G       | VP            | VP        | F    |
| AC Pinnacle #    | 5            | 112                       | 118    | 111    | 108    | 245               | 23.1   | 80      | VL               | G       | G             | VG        | VG   |
| AC Rebel # ^     | 7            | 99                        | 105    | 102    | 99     | 244               | 23.1   | 67      | L                | G       | VG            | VP        | VG   |
| AC Ronald #      | 4            | 91                        | 98     | 98     | 95     | 253               | 21.8   | 62      | L                | VG      | VG            | VG        | VG   |
| Triple Crown #   | 8            | 95                        | 107    | 109    | 107    | 238               | 24.7   | 67      | L                | VG      | VP            | F         | P    |

\* Interim registered

\* Maturity rating: M = 96 days

# Hulless variety

### Additional information:

**AC Assiniboia** has brown hulls.

**Hulless oat:** The hull is part of normal oat yield, thus hulless types yield less. They are difficult to handle and should be stored at less than 12% moisture.

CDC Baler, CDC Bell and AC Murphy are annual forage oat varieties available for forage production in Saskatchewan.

# Other Crops

## Canary Seed

The seed of annual canarygrass, more commonly called canary seed, is used as food for caged and wild birds. Three registered varieties are available. **Elias** and **Keet** are similar in yield, but **Keet** is earlier maturing and more resistant to lodging. Seeds and plants of **CDC Maria** do not have the small sharp hairs that cause irritation when canary seed is threshed and handled. Canary seed plants have a dense shallow root system and thus growing the crop on sandy soils is not recommended. Canary seed may be grown successfully on stubble, providing adequate moisture is available for rapid germination and emergence. The maturity requirements are equal to wheat.

Sow at the same optimum date as spring wheat at 34 kg/ha (30 lb/ac) (germination greater than 85 percent). Early seeding may lower yields in some cases. Plant the seed 3.5 to 5 cm deep into a firm seedbed.

Fertilizer requirements are similar to those for cereal crops.

Canary seed is subject to damage by English grain aphid and bird cherry-oat aphid. Aphid populations build up rapidly on leaves, stems and head of the plant in August and may require an insecticide application to prevent yield loss. Information from the United States indicates that infestations of 10-20 aphids on 50 percent of the stems prior to soft dough stage may cause enough damage to warrant insecticide application. The aphids often hide in the dense head of canary seed. Damage may occur at populations below these levels.

Canary seed leaf mottle is a foliar

disease that can cause yield losses. Leaf mottle is caused by a fungus, *Septoria triseti*, that only affects canary seed. The disease is inconspicuous at early stages because there is little visual contrast between healthy and diseased leaf area. Stubble borne inoculum is the source of infection, thus crop rotation is key in limiting the severity of leaf mottle.

Canary seed should not be seeded on land that was treated with trifluralin or ethalfluralin the previous year.

Canary seed is resistant to shattering. It may be straight-combined or swathed when fully matured.

For more information on canary seed, consult the SAF publication, *Canary Seed in Saskatchewan*.

## Safflower

Safflower is an annual oilseed or birdseed crop which can be grown successfully in the Brown soil zone. Safflower must be sown early (late April).

**Saffire** matures in about 120 days. Seed shallow but into a firm moist seedbed at about 30 kg/ha (27 lbs/ac). **Saffire** has moderate resistance to Sclerotinia head rot and Alternaria leaf spot. Contract production is advisable.

**AC Stirling** has acceptable birdseed quality and higher oil content compared to **Saffire**. **AC Sunset** has the earliness of **Saffire** combined with higher oil content and resistance to Sclerotinia head rot.

## Buckwheat

Buckwheat is sensitive to high temperatures and dry weather conditions in the blossom stage which can reduce

seed set and yields. New self-pollinated varieties are being released. Buckwheat is very susceptible to frost at all stages of growth. Delayed seeding is advisable to avoid spring frost.

## Caraway

Caraway is a biennial spice crop, producing seed in the second year and sometimes in the third year. Seedlings are small, slow in developing and compete poorly with weeds. The crop is usually swathed because of its indeterminate growth habit and seed shattering. For more information, consult the SAF publication, *Caraway in Saskatchewan*.

## Fenugreek

Fenugreek is a leguminous spice crop adapted to dryland conditions in the Dark Brown and Brown soil zones. The crop should be seeded early to avoid yield and quality loss from fall frost. Contract production is advisable, as markets are limited.

## Coriander

Coriander is an annual spice crop. Seedlings are small, slow to develop, and compete poorly with weeds. The large seeded type is earlier maturing than the small seeded type. CDC Major is a large-seeded coriander variety and CDC Minor is a small-seeded variety. The crop is usually straight-cut to avoid wind damage to swaths. For more information consult the SAF publication, *Coriander in Saskatchewan*.

# Oilseed Crops

## Argentine Canola

Main characteristics of varieties

| Variety†             | Yield as a % of AC Excel (years in test) |           |           | Average<br>% Oil* | Average<br>maturity<br>in days | Resistance to |            | Varietal<br>Kind*** |
|----------------------|------------------------------------------|-----------|-----------|-------------------|--------------------------------|---------------|------------|---------------------|
|                      | Area<br>2                                | Area<br>3 | Area<br>4 |                   |                                | Lodging       | Blackleg** |                     |
| AC Excel             | 100                                      | 100       | 100       | 46.8              | 98                             | G             | F          | OP                  |
| 220                  | 118 (3)                                  | 117 (3)   | --        | 45.9              | 99                             | VG            | G          | S                   |
| CLAVET               | 106 (4)                                  | 107 (4)   | --        | 45.5              | 98                             | F             | G          | OP                  |
| IMC106 (RR)          | 97 (3)                                   | 95 (3)    | 93 (2)    | 47.6              | 99                             | G             | G          | OP                  |
| Magellan             | 114 (4)                                  | 112 (4)   | --        | 45.2              | 99                             | G             | F          | OP                  |
| 279                  | --                                       | 109 (3)   | --        | 48.6              | 99                             | G             | G          | OP                  |
| 499RR                | 103 (3)                                  | 110 (3)   | --        | 46.9              | 99                             | G             | VG         | HYB                 |
| Agassiz              | 103 (4)                                  | 108 (4)   | 107 (3)   | 44.1              | 102                            | G             | F          | OP                  |
| Ascent               | 99 (4)                                   | 108 (4)   | --        | 46.9              | 98                             | G             | F          | OP                  |
| 561RR                | 97 (3)                                   | 109 (3)   | --        | 45.7              | 98                             | G             | G          | OP                  |
| 601                  | 119 (3)                                  | --        | --        | 47.0              | 99                             | VG            | G          | HYB                 |
| 799RR                | 103 (3)                                  | 114 (3)   | --        | 45.9              | 99                             | G             | G          | S                   |
| 2573 (LL)            | 126 (4)                                  | 133 (3)   | 129 (2)   | 45.5              | 97                             | VG            | VG         | HYB                 |
| 2663 (LL)            | 123 (4)                                  | 136 (3)   | 148 (2)   | 44.5              | 95                             | VG            | VG         | HYB                 |
| HyLite 225 (RR) ♀    | 107 (3)                                  | 104 (3)   | 99 (2)    | 48.2              | 97                             | G             | G          | OP                  |
| 215 (CL) ♀           | 93 (2)                                   | 100 (3)   | 106 (2)   | 48.5              | 100                            | G             | F          | OP                  |
| 243 (CL) ♀           | 86 (2)                                   | 99 (3)    | --        | 47.1              | 100                            | G             | F          | OP                  |
| Hyola 401            | 102 (3)                                  | 121 (3)   | 107 (3)   | 44.1              | 96                             | G             | P          | HYB                 |
| Hyola 454 (RR)       | 98 (2)                                   | 103 (2)   | 96 (2)    | 44.7              | 97                             | G             | G          | HYB                 |
| Canterra 1867 (RR)   | 93 (3)                                   | 103 (4)   | 85 (2)    | 46.8              | 97                             | G             | F          | OP                  |
| 1812 (RR)            | 104 (3)                                  | 102 (2)   | --        | 47.1              | 101                            | G             | G          | S                   |
| 1492                 | 118 (4)                                  | 125 (5)   | 123 (4)   | 45.9              | 99                             | VG            | F          | HYB                 |
| 3235 (RR) ♀          | 103 (5)                                  | 101 (5)   | 102 (3)   | 46.6              | 96                             | G             | G          | OP                  |
| 34-55 (RR) ♀         | 105 (3)                                  | 108 (3)   | 106 (2)   | 47.9              | 99                             | VG            | G          | OP                  |
| Dawn (RR) ♀          | 111 (3)                                  | 101 (3)   | --        | 45.2              | 99                             | F             | F          | OP                  |
| 3345 (RR) ♀          | 108 (3)                                  | 99 (3)    | --        | 45.6              | 98                             | G             | G          | OP                  |
| 45A51 (RR) ♀         | 110 (3)                                  | 109 (3)   | 115 (3)   | 45.9              | 102                            | G             | F          | OP                  |
| 45A54 (RR) ♀         | 114 (3)                                  | 102 (3)   | --        | 46.2              | 97                             | G             | VG         | OP                  |
| 45A55 (RR) ♀         | 102 (3)                                  | 120 (3)   | 92 (2)    | 46.5              | 96                             | G             | VG         | OP                  |
| 45A71 (CL) ♀         | 113 (3)                                  | 107 (3)   | 108 (3)   | 45.4              | 98                             | F             | F          | OP                  |
| 45A77 (CL) ♀         | 112 (3)                                  | 128 (3)   | 115 (3)   | 47.5              | 98                             | G             | VG         | OP                  |
| 46A65 ♀              | 111 (5)                                  | 112 (6)   | 115 (5)   | 47.5              | 98                             | F             | VG         | OP                  |
| 46A73 (CL) ♀         | 101 (3)                                  | 115 (3)   | --        | 45.2              | 101                            | G             | G          | OP                  |
| 46A76 (CL) ♀         | 134 (3)                                  | 128 (3)   | --        | 45.5              | 100                            | VG            | VG         | OP                  |
| AC Tristar (TT)      | 75 (4)                                   | 79 (4)    | 67 (4)    | 43.8              | 97                             | P             | VP         | OP                  |
| Bianca II ♀          | 98 (2)                                   | 98 (2)    | 85 (2)    | 48.2              | 100                            | G             | VG         | OP                  |
| Heritage (RR)        | 95 (3)                                   | 99 (4)    | 83 (2)    | 45.5              | 97                             | F             | G          | OP                  |
| Cyclone ♀            | 107 (5)                                  | 115 (4)   | 121 (5)   | 44.5              | 98                             | G             | G          | OP                  |
| DS-Roughrider (RR) ♀ | 101 (4)                                  | 107 (4)   | 91 (2)    | 49.4              | 98                             | G             | F          | OP                  |
| EAGLE ♀              | --                                       | 114 (3)   | --        | 45.7              | 97                             | G             | G          | OP                  |
| Foremost ♀           | 131 (4)                                  | 117 (3)   | --        | 46.0              | 101                            | VG            | VG         | OP                  |
| Hy-PerStar 100       | 113 (5)                                  | 119 (6)   | 121 (3)   | 45.9              | 100                            | VG            | G          | HYB                 |
| Sentry               | 97 (5)                                   | 101 (5)   | --        | 44.5              | 98                             | G             | VG         | OP                  |
| Hudson ♀             | 117 (3)                                  | 116 (3)   | --        | 45.6              | 96                             | G             | G          | OP                  |

## Argentine Canola (Continued)

Main characteristics of varieties

| Variety†       | Yield as a % of AC Excel (years in test) |           |           | Average<br>% Oil* | Average<br>maturity<br>in days | Resistance to |            | Varietal<br>Kind*** |
|----------------|------------------------------------------|-----------|-----------|-------------------|--------------------------------|---------------|------------|---------------------|
|                | Area<br>2                                | Area<br>3 | Area<br>4 |                   |                                | Lodging       | Blackleg** |                     |
| IMPULSE        | 108 (3)                                  | 121 (4)   | 112 (3)   | 45.4              | 100                            | G             | VG         | OP                  |
| OAC Dynamite ▲ | 118 (3)                                  | 115 (4)   | 118 (3)   | 45.6              | 97                             | G             | VG         | OP                  |
| Skyhawk ◆      | --                                       | 122 (3)   | --        | 45.0              | 97                             | G             | VG         | OP                  |
| Admire (RR)    | 105 (2)                                  | 133 (3)   | 108 (2)   | 46.4              | 100                            | VG            | G          | S                   |
| Conquest (RR)  | 103 (3)                                  | 106 (3)   | --        | 46.9              | 100                            | VG            | VG         | OP                  |
| Hi-Q ◆         | 114 (3)                                  | 111 (3)   | --        | 46.8              | 99                             | VG            | VG         | OP                  |
| Kelsey (RR)    | 91 (3)                                   | 101 (3)   | 91 (2)    | 47.7              | 96                             | G             | G          | OP                  |
| LoLinda        | 97 (2)                                   | 96 (3)    | --        | 45.4              | 98                             | G             | G          | OP                  |
| Q2 ▲           | 106 (4)                                  | 117 (4)   | 105 (4)   | 45.0              | 102                            | G             | VG         | OP                  |
| SP Armada      | 103 (2)                                  | 117 (3)   | 101 (2)   | 46.9              | 98                             | VG            | VG         | OP                  |
| SW 5001        | 115 (3)                                  | 122 (3)   | --        | 46.1              | 100                            | VG            | VG         | HYB                 |
| SW ARROW (RR)◆ | 105 (3)                                  | 108 (4)   | --        | 44.3              | 97                             | F             | F          | OP                  |
| SW GladiatoRR  | --                                       | 115 (2)   | 101 (2)   | 46.8              | 96                             | VG            | G          | S                   |
| SW RazoR (RR)  | --                                       | 119 (2)   | --        | 45.3              | 97                             | VG            | G          | S                   |
| SW RideR (RR)  | 106 (2)                                  | 114 (2)   | 110 (4)   | 46.0              | 98                             | G             | F          | S                   |
| Thunder        | 101 (3)                                  | 106 (3)   | 105 (2)   | 46.4              | 98                             | G             | G          | OP                  |
| Trailblazer ▲  | 109 (3)                                  | 111 (3)   | --        | 46.5              | 100                            | G             | G          | OP                  |

† For seed distributors, please see pages 22 to 24 of this pamphlet.

\* Dry basis

\*\* A minimum of 3 years between canola crops (4 year rotation) is essential to reduce the incidence of blackleg.

\*\*\* OP = open-pollinated; HYB = hybrid; S = synthetic;

Herbicide tolerance: RR = Roundup Ready, LL = Liberty Link, CL = Clearfield, TT = triazine.

Note: In most instances, only new varieties are tested each year. Therefore, comparisons should only be made between the check variety (AC Excel) and the variety of interest.

## Polish Canola

Main characteristics of varieties

| Variety      | Yield as a % of AC Parkland (years in test) |           |           | Average<br>% Oil* | Average<br>maturity<br>in days | Resistance to |            | Varietal<br>Kind** |
|--------------|---------------------------------------------|-----------|-----------|-------------------|--------------------------------|---------------|------------|--------------------|
|              | Area<br>2                                   | Area<br>3 | Area<br>4 |                   |                                | Lodging       | White rust |                    |
| AC Parkland  | 100                                         | 100       | 100       | 44.2              | 85                             | G             | VG         | OP                 |
| 1007         | 104 (3)                                     | 106 (3)   | -- (1)    | 44.5              | 85                             | VG            | G          | S                  |
| 1000 SP      | 102 (3)                                     | 98 (4)    | -- (2)    | 44.4              | 84                             | F             | G          | S                  |
| 41P55        | 108 (6)                                     | 111 (6)   | 110 (5)   | 42.9              | 84                             | F             | F          | OP                 |
| AC Boreal    | 102 (7)                                     | 101 (7)   | 102 (6)   | 45.1              | 84                             | F             | VG         | S                  |
| AC Sunbeam   | 104 (7)                                     | 104 (8)   | 106 (7)   | 43.5              | 83                             | G             | VG         | OP                 |
| Cash         | 97 (3)                                      | 109 (3)   | 110 (3)   | 43.9              | 84                             | G             | F          | S                  |
| FAIRVIEW     | 104 (3)                                     | 107 (3)   | --        | 44.3              | 85                             | G             | G          | S                  |
| Hysyn 110    | 109 (6)                                     | 110 (6)   | 120 (6)   | 42.9              | 84                             | G             | F          | S                  |
| Hysyn 111    | 105 (4)                                     | 107 (5)   | 116 (3)   | 42.8              | 86                             | G             | G          | S                  |
| Hysyn 120 CS | 98 (3)                                      | 103 (4)   | -- (2)    | 44.0              | 85                             | G             | G          | S                  |
| Reward       | 104 (9)                                     | 103 (10)  | 102 (8)   | 44.4              | 84                             | F             | VG         | OP                 |
| WESTWIN      | 105 (3)                                     | 109 (3)   | 106 (3)   | 44.6              | 84                             | G             | G          | S                  |

\* Dry basis

\*\* OP = open-pollinated; S = synthetic;

Note: In most instances, only new varieties are tested each year. Therefore, comparisons should only be made between the check variety (AC Parkland) and the variety of interest.

A minimum of 3 years between canola crops (4 year rotation) is essential to reduce the incidence of blackleg.

## Additional Information

### Argentine Canola

Argentine varieties yield about 20-30 percent more than Polish varieties. Argentine varieties mature 10 to 14 days later than Polish varieties and are therefore better suited to the longer season growing areas of Saskatchewan. Blackleg disease, which is now wide spread in Saskatchewan, can cause severe yield losses in varieties that have poor (P) resistance. Argentine varieties are susceptible to seed shattering when left standing at full maturity. Later maturing varieties tend to produce higher levels of green seed under wet and cool conditions at harvest, which can cause substantial grade reductions. Late maturing varieties should therefore be planted early to reduce green seed counts. All Argentine varieties are susceptible to Sclerotinia stem rot. Herbicide tolerant varieties should be considered when severe weed infestations are expected. Please note that only new varieties are tested each year. Therefore most varieties have not been tested in the same year. Varietal comparisons should therefore ONLY be made between the check variety (**AC Excel**) and the variety of interest.

### Polish Canola

Polish varieties mature approximately two weeks earlier than Argentine varieties and are therefore less likely to produce green seed. Polish varieties are more heat and drought tolerant than Argentine varieties. They are also more shatter resistant than Argentine varieties and are therefore well suited to straight combining. All Polish varieties are susceptible to Sclerotinia stem rot and blackleg. Blackleg is less of a threat in Polish canola because of its early maturity, which tends to reduce the impact of the disease on seed yields. Please note that only new varieties are tested each year. Therefore most varieties have not been tested in the same year. Varietal comparisons should therefore ONLY be made between the check variety (**AC Parkland**) and the variety of interest.

### Specialty Oil Rapeseed and Canola

High erucic acid is needed for special industrial oil markets. Argentine type, high erucic acid varieties have been developed for these markets. These varieties can be lower yielding than conventional open-pollinated canola varieties but have very good blackleg resistance. Low linolenic acid Argentine type canola varieties have been developed. The oil is used as a premium vegetable oil for human consumption. Information on the contract production of these specialty oil rapeseed and canola varieties should be obtained from companies that contract such production.

### Irrigation

Argentine varieties respond well to irrigation. Only varieties that are highly resistant to lodging and blackleg should be grown under these conditions. Irrigation may delay maturity by one week or more under certain conditions.

## Mustard

### Main characteristics of varieties

| Type & Variety | Yield as % of Cutlass | Average maturity in days |
|----------------|-----------------------|--------------------------|
|----------------|-----------------------|--------------------------|

#### Oriental

|               |     |    |
|---------------|-----|----|
| Cutlass       | 100 | 92 |
| Forge         | 99  | 93 |
| Lethbridge22A | 91  | 93 |
| AC Vulcan     | 102 | 92 |

#### Brown

|            |    |    |
|------------|----|----|
| commercial | 92 | 91 |
| Duchess    | 94 | 90 |

|  | Yield as % of Ochre | Average maturity in days |
|--|---------------------|--------------------------|
|--|---------------------|--------------------------|

#### Yellow

|            |     |    |
|------------|-----|----|
| Ochre      | 100 | 93 |
| AC Base    | 104 | 90 |
| AC Pennant | 106 | 92 |
| Gisilba    | 97  | 93 |
| Tilney     | 100 | 93 |
| Viscount   | 96  | 93 |

## Additional Information

### Mustard

Mustard is grown in the drier regions of Saskatchewan because of the better seed quality obtained under these conditions. Mustard is normally grown under contract production.

Yellow mustard varieties are large seeded, and the seed is light yellow in colour. The yield of yellow mustard is approximately 30 percent less than that of Oriental mustard. Differences in seed yield between these two species is normally compensated for by price. Yellow mustard should be straight combined because of possible losses due to wind damage in the swath.

Oriental and Brown mustards are usually swathed, but straight combining is also possible. Any mixtures of rapeseed or canola in mustard, due to volunteer plants in the field, or to improper handling on the farm, cause substantial losses through grade reductions. All mustard varieties have very good resistance to blackleg. **AC Vulcan** and **Cutlass** are resistant to white rust (staghead), while **Forge** and **commercial Brown** are highly susceptible.

## Sunflower (Oilseed)

### Main characteristics of varieties

| Variety | Years tested | Yield as % of IS 6111 | Average maturity in days | Oil %* |
|---------|--------------|-----------------------|--------------------------|--------|
| IS 6111 | 11           | 100                   | 122                      | 46.5   |
| SF 270  | 11           | 106                   | 122                      | 47.6   |
| SF 187  | 10           | 100                   | 126                      | 43.2   |
| 63A70   | 3            | 111                   | 122                      | 49.9   |

\* Dry basis

## Sunflower (Oilseed) EMSS

| Variety | Years tested | Yield as % of P6150 | Average maturity in days | Oil %* |
|---------|--------------|---------------------|--------------------------|--------|
| P6150   | 9            | 100                 | 113                      | 46.6   |
| 63A21   | 4            | 111                 | 114                      | 47.5   |

\* Dry basis

## Sunflower (Confection)

| Variety | Years tested | Yield as % of IS 6111 | Average maturity in days | Seed size % over 20/64 |
|---------|--------------|-----------------------|--------------------------|------------------------|
| IS 8048 | 3            | 91                    | 124                      | 57.7                   |

### Additional Information

Sunflower requires 105-125 days to mature, depending on the cultivar and the growing season. Oilseed sunflower has been grown in the Dark Brown and Black soil zones in southeastern Saskatchewan.

The earlier maturing, short stature (EMSS) varieties are adapted to production in most areas of Saskatchewan.

The Saskatchewan Sunflower Committee has been conducting trials in Saskatchewan for the purpose of registration and demonstration since 1983.

Varieties that have been tested in official Saskatchewan Sunflower Committee trials for three years and are registered for production in Canada are placed on this list.

The Committee has been testing NuSun, a sunflower with a fatty acid profile desired by major frying companies. The potential of NuSun and the growing birdseed market could increase production in Saskatchewan.

## Flax

### Main characteristics of varieties

| Variety        | Years tested | Yield as % of Vimy |        |        |        | Irr | Maturity** | Seed size | Resistance to Lodging |
|----------------|--------------|--------------------|--------|--------|--------|-----|------------|-----------|-----------------------|
|                |              | Area 1             | Area 2 | Area 3 | Area 4 |     |            |           |                       |
| Vimy           | 16           | 100                | 100    | 100    | 100    | 100 | M          | L         | P                     |
| CDC Arras      | 7*           | 104                | 107    | 104    | 104    | 105 | M          | L         | F                     |
| CDC Bethune ▲  | 7*           | 111                | 117    | 114    | 116    | 113 | L          | M         | G                     |
| AC Camduff ◆   | 6*           | 83                 | 92     | 101    | 93     | 116 | M          | M         | G                     |
| AC Emerson     | 8            | 96                 | 96     | 95     | 93     | 98  | M          | L         | F                     |
| Flanders       | 11           | 94                 | 98     | 96     | 99     | 108 | L          | S         | G                     |
| AC Hanley ◆    | 4*           | --                 | 100    | 101    | ---    | --- | M          | M         | G                     |
| AC Lightning ◆ | 5*           | 101                | 105    | 107    | ---    | 101 | L          | M         | G                     |
| AC Linora ^    | 8            | 84                 | 91     | 95     | 93     | 102 | L          | M         | G                     |
| AC McDuff ▲    | 7            | 93                 | 95     | 97     | 94     | 102 | VL         | M         | VG                    |
| NorLin         | 16           | 91                 | 96     | 96     | 99     | 105 | M          | M         | G                     |
| CDC Normandy   | 7            | 96                 | 100    | 101    | 104    | 105 | M          | M         | F                     |
| Somme          | 10           | 94                 | 97     | 98     | 97     | 109 | M          | M         | F                     |
| Taurus ▲       | 5*           | 98                 | 103    | 109    | ---    | 115 | M          | M         | G                     |
| CDC Valour ▲   | 5            | 97                 | 101    | 95     | 95     | 92  | E          | M         | G                     |
| AC Watson ◆    | 5            | 93                 | 96     | 102    | 102    | 103 | M          | M         | G                     |
| <b>Solin</b>   |              |                    |        |        |        |     |            |           |                       |
| Linola™ 989 ▲  | 6            | 93                 | 92     | 97     | 103    | 96  | L          | M         | G                     |
| Linola™ 1084 ▲ | 5*           | 94                 | 96     | 95     | 106    | 102 | M          | M         | G                     |

\* Data from Regional and Coop Yield Trials.

\*\* The relative maturity of the check, Vimy, is M (on average 103 days from seeding to swathing ripeness).

### Additional Information:

All varieties are resistant to rust and moderately resistant to Fusarium wilt. **AC Lightning** and **AC Hanley** are newly registered varieties.

**AC Lightning** is distributed by Canterra Seeds Ltd. and **AC Hanley** by SeCan Association and no seed is available for either variety in 2002.

Solin is defined as a type of flax with less than 5% linolenic acid in its oil and having a yellow seed coat. Solin varieties produce food quality oil and, as such, cannot be sold in traditional flax markets. **Linola™ 989** and **Linola™ 1084** are available only for contract production.

Frozen flax should be analyzed by a feed testing laboratory to determine that it is free of prussic acid before using it as a livestock feed.

# Pulse Crops

## Lentil

### Main characteristics of varieties

| Variety       | Years tested* | —Yield % of Laird— |           | Height (cm) | Days to flower | Maturity rating | —Resistance to—  |             | Cotyledon color | Seed weight (g/1000) |
|---------------|---------------|--------------------|-----------|-------------|----------------|-----------------|------------------|-------------|-----------------|----------------------|
|               |               | Areas 1-2          | Areas 3-4 |             |                |                 | Ascochyta blight | Anthracnose |                 |                      |
| Laird         | 7             | 100                | 100       | 41          | 53             | VL              | VP               | VP          | yellow          | 67                   |
| CDC Glamis    | 6             | 110                | 106       | 39          | 54             | VL              | G                | VP          | yellow          | 60                   |
| CDC Grandora  | 5             | 108                | 111       | 40          | 53             | VL              | G                | VP          | yellow          | 69                   |
| CDC Sovereign | 5             | 112                | 109       | 40          | 52             | L               | G                | P           | yellow          | 66                   |
| CDC Sedley    | 4             | 118                | 106       | 39          | 51             | M               | F                | VP          | yellow          | 68                   |
| CDC Richlea   | 6             | 131                | 111       | 35          | 50             | M               | VP               | VP          | yellow          | 51                   |
| CDC Vantage   | 6             | 133                | 124       | 33          | 49             | M               | G                | VP          | yellow          | 52                   |
| Eston         | 6             | 114                | 105       | 30          | 48             | E               | VP               | VP          | yellow          | 33                   |
| CDC Milestone | 7             | 137                | 125       | 31          | 49             | E               | G                | VP          | yellow          | 37                   |
| Crimson       | 4             | 120                | 112       | 29          | 49             | E               | VP               | VP          | red             | 35                   |
| CDC Blaze     | 3             | 129                | 121       | 30          | 47             | E               | G                | P           | red             | 34                   |
| CDC Redcap    | 5             | 126                | 117       | 30          | 49             | E               | G                | F           | red             | 35                   |
| CDC Redwing   | 6             | 122                | 112       | 30          | 50             | E               | G                | VP          | red             | 38                   |
| CDC Robin     | 4             | 135                | 116       | 30          | 49             | E               | G                | G           | red             | 30                   |

\* Coop and Regional Trials in Saskatchewan since 1995. Direct yield comparisons to Laird.

**Additional Information:** Indianhead lentil is a black-seeded variety released for green manure use. CDC Matador is a brown-seeded variety with yellow cotyledons. Seed supplies are limited for CDC Blaze and CDC Sedley. Detailed agronomic information may be found in the *Pulse Production Manual*, available from the Saskatchewan Pulse Growers.

## Dry Bean

### Main characteristics of varieties

| Variety       | Type           | Years tested | —Yield as % of Pintium—<br>(In narrow row trials)† |        |            | Days to flower | Maturity | Pod clearance rating (%) | Seed weight (g/1000) | Growth habit |
|---------------|----------------|--------------|----------------------------------------------------|--------|------------|----------------|----------|--------------------------|----------------------|--------------|
|               |                |              | Area 2                                             | Area 3 | Irrigation |                |          |                          |                      |              |
| CDC Pintium   | pinto          | 5            | 100                                                | 100    | 100        | 50             | E        | 80                       | 350                  | I            |
| Othello       | pinto          | 5            | 99                                                 | 88     | 108        | 52             | L        | 51                       | 323                  | III          |
| CDC Pinnacle  | pinto          | 4            | 101                                                | 88     | 114        | 53             | L        | 67                       | 352                  | III          |
| CDC Altiro    | pinto          | 5            | 86                                                 | 77     | 102        | 47             | E        | 64                       | 357                  | III          |
| AC Burrito    | pinto          | 5            | 102                                                | 88     | 100        | 53             | M        | 64                       | 307                  | II           |
| CDC Camino    | pinto          | 5            | 86                                                 | 76     | 95         | 52             | L        | 81                       | 323                  | I            |
| Earlray       | pinto          | 3            | 89                                                 | 80     | 82         | 50             | E        | 65                       | 349                  | I            |
| CDC Crocus    | great northern | 4            | 99                                                 | 79     | 103        | 47             | E        | 59                       | 355                  | III          |
| CDC Bianca    | great northern | 5            | 81                                                 | 71     | 110        | 52             | L        | 69                       | 365                  | I            |
| CDC Nordic    | great northern | 5            | 79                                                 | 68     | 91         | 52             | L        | 62                       | 319                  | I            |
| US 1140       | great northern | 5            | 92                                                 | 83     | 103        | 51             | L        | 53                       | 289                  | III          |
| CDC Rosalee   | pink           | 4            | 96                                                 | 94     | 110        | 50             | L        | 65                       | 247                  | III          |
| Viva          | pink           | 4            | 104                                                | 87     | 101        | 51             | L        | 50                       | 242                  | III          |
| CDC Espresso  | black          | 5            | 78                                                 | 72     | 68         | 47             | M        | 87                       | 191                  | I            |
| CDC Nighthawk | black          | 5            | 67                                                 | 58     | 74         | 58             | L        | 77                       | 165                  | II           |
| UI906         | black          | 5            | 96                                                 | 71     | 80         | 60             | L        | 76                       | 148                  | II           |
| AC Skipper    | navy           | 5            | 67                                                 | 65     | 73         | 54             | L        | 77                       | 206                  | I            |
| GTS 523       | navy           | 5            | 89                                                 | 78     | --         | 51             | M        | 75                       | 147                  | I            |

\* Coop and regional trials. All trials conducted at row spacing of 30 cm or less.

\*\* Growth habit: I - determinate bush; II - indeterminate bush; III - indeterminate vine.

† For production in wide rows using undercutting, consult the CSIDC publication, *Crop Varieties for Irrigation*.

**Additional Information:** In short season regions, only the earliest maturing varieties should be grown. Detailed agronomic information may be found in the *Pulse Production Manual*, available from the Saskatchewan Pulse Growers.

# Field Pea

## Main characteristics of varieties

| Variety               | Years tested | Yield as % of Alfetta— |               |            | Leaf type* | Relative maturity | Vine        |                  | Resistance to  |                    |         |           | Seed coat dimpling** | Green seed coats*** | Seed weight (g/1000) |
|-----------------------|--------------|------------------------|---------------|------------|------------|-------------------|-------------|------------------|----------------|--------------------|---------|-----------|----------------------|---------------------|----------------------|
|                       |              | 1.2 & South 3          | North 3 and 4 | Irrigation |            |                   | Length (cm) | Ascochyta blight | Powdery mildew | Seed coat breakage | Lodging | Bleaching |                      |                     |                      |
| Food Type Yellow-Seed |              |                        |               |            |            |                   |             |                  |                |                    |         |           |                      |                     |                      |
| Alfetta ▲             | 7            | 100                    | 100           | 100        | SL         | M                 | 72          | P                | P              | F                  | F       | n/a       | F                    | G                   | 290                  |
| AC Melfort ♦          | 4            | 98                     | 86            | 87         | SL         | M                 | 70          | F                | VG             | F                  | F       | n/a       | G                    | F                   | 240                  |
| Cameval ▲             | 7            | 89                     | 85            | 107        | SL         | M                 | 75          | F                | P              | F                  | G       | n/a       | --                   | --                  | 230                  |
| Carrera               | 6            | 99                     | 98            | 107        | SL         | E                 | 55          | P                | P              | G                  | F       | n/a       | --                   | --                  | 270                  |
| CDC Winfield          | 5            | 94                     | 89            | --         | N          | M                 | 62          | VP               | P              | F                  | F       | n/a       | --                   | --                  | 260                  |
| CDC HANDEL            | 5            | 112                    | 99            | --         | SL         | L                 | 75          | P                | VG             | G                  | F       | n/a       | G                    | F                   | 220                  |
| CDC MOZART            | 5            | 114                    | 104           | 109        | SL         | M                 | 70          | F                | VG             | G                  | F       | n/a       | G                    | F                   | 230                  |
| CDC Minuet            | 4            | 108                    | 105           | --         | SL         | M                 | 70          | F                | VG             | F                  | F       | n/a       | G                    | F                   | 190                  |
| COBRA                 | 4            | 99                     | 94            | --         | SL         | M                 | 75          | P                | P              | G                  | F       | n/a       | F                    | F                   | 240                  |
| CROMA ▲               | 5            | 101                    | 100           | --         | SL         | E                 | 70          | P                | P              | G                  | F       | n/a       | G                    | G                   | 300                  |
| Delta ▲               | 4            | 101                    | 98            | --         | SL         | E                 | 72          | P                | P              | G                  | F       | n/a       | --                   | --                  | 250                  |
| DS Admiral ♦          | 4            | 103                    | 111           | --         | SL         | E                 | 80          | F                | VG             | G                  | G       | n/a       | G                    | G                   | 240                  |
| DS Stalwarth          | 4            | 97                     | 95            | 101        | SL         | M                 | 80          | P                | VG             | G                  | F       | n/a       | G                    | G                   | 240                  |
| Eclipse ♦             | 4            | 109                    | 104           | 111        | SL         | M                 | 80          | F                | VG             | G                  | G       | n/a       | F                    | G                   | 250                  |
| Eiffel ▲              | 5            | 93                     | 101           | --         | SL         | E                 | 67          | VP               | P              | F                  | F       | n/a       | --                   | --                  | 290                  |
| GRANDE ▲              | 7            | 93                     | 91            | 93         | N          | L                 | 90          | F                | P              | G                  | F       | n/a       | G                    | F                   | 220                  |
| Highlight ▲           | 5            | 84                     | 84            | 97         | SL         | E                 | 66          | P                | VG             | F                  | F       | n/a       |                      |                     | 210                  |
| INTEGRA ▲             | 4            | 85                     | 100           | --         | SL         | E                 | 75          | F                | P              | G                  | G       | n/a       | F                    | F                   | 280                  |
| Mandy                 | 4            | 88                     | 94            | 96         | SL         | M                 | 57          | VP               | P              | F                  | F       | n/a       | --                   | --                  | 270                  |
| Miami ♦               | 5            | 102                    | 102           | --         | SL         | E                 | 80          | P                | P              | F                  | G       | n/a       | G                    | F                   | 240                  |
| Nicole ♦              | 4            | 106                    | 105           | --         | SL         | M                 | 65          | P                | P              | F                  | F       | n/a       | G                    | G                   | 260                  |
| PROFI ▲               | 5            | 90                     | 85            | 95         | SL         | E                 | 72          | P                | P              | F                  | F       | n/a       |                      | --                  | 270                  |
| SW Bravo ♦            | 4            | 88                     | 95            | --         | SL         | E                 | 75          | F                | P              | G                  | G       | n/a       | G                    | G                   | 260                  |
| SW CAPRI ♦            | 3            | 101                    | 108           | --         | SL         | E                 | 75          | F                | P              | F                  | G       | n/a       | G                    | F                   | 210                  |
| SW Salute ♦           | 3            | 113                    | 108           | --         | SL         | E                 | 75          | P                | VG             | F                  | F       | n/a       | F                    | F                   | 220                  |
| SWING ▲               | 5            | 95                     | 99            | --         | SL         | E                 | 75          | F                | P              | VG                 | G       | n/a       | G                    | G                   | 250                  |
| Victoria              | 7            | 80                     | 77            | --         | N          | M                 | 84          | P                | P              | F                  | P       | n/a       | --                   | --                  | 190                  |
| Food Type Green Seed  |              |                        |               |            |            |                   |             |                  |                |                    |         |           |                      |                     |                      |
| AC Advantage          | 4            | 79                     | 68            | --         | SL         | L                 | 60          | F                | VG             | G                  | P       | F         | F                    | n/a                 | 270                  |
| Cascade               | 4            | 91                     | 87            | --         | SL         | M                 | 75          | F                | P              | VG                 | F       | G         | G                    | n/a                 | 200                  |
| CDC Montero           | 4            | 99                     | 90            | --         | SL         | M                 | 80          | F                | VG             | G                  | F       | F         | F                    | n/a                 | 230                  |
| CDC VERDI             | 5            | 90                     | 73            | --         | SL         | L                 | 75          | F                | P              | G                  | F       | G         | F                    | n/a                 | 200                  |
| DS Dominator ♦        | 3            | 86                     | 67            | --         | SL         | L                 | 65          | F                | VG             | G                  | G       | F         | F                    | n/a                 | 230                  |
| Espace ▲              | 4            | 96                     | 101           | --         | SL         | M                 | 75          | P                | P              | F                  | G       | F         | F                    | n/a                 | 230                  |
| Logan                 | 4            | 85                     | 86            | --         | SL         | E                 | 75          | P                | P              | F                  | G       | G         | F                    | n/a                 | 180                  |
| Madoc ▲               | 4            | 96                     | 99            | 107        | SL         | E                 | 70          | P                | P              | F                  | F       | F         | F                    | n/a                 | 250                  |
| MAJORET ▲             | 5            | 79                     | 75            | 95         | SL         | M                 | 59          | P                | P              | G                  | G       | F         | --                   | n/a                 | 250                  |
| Millenium ▲           | 5            | 103                    | 97            | --         | SL         | E                 | 65          | P                | P              | F                  | F       | F         | F                    | n/a                 | 260                  |
| NITOUCHE ▲            | 5            | 92                     | 94            | 92         | SL         | M                 | 75          | F                | P              | G                  | G       | G         | F                    | n/a                 | 250                  |
| Olvin ▲               | 4            | 87                     | 92            | 89         | N          | M                 | 64          | VP               | P              | G                  | P       | F         | --                   | n/a                 | 270                  |
| Princess              | 5            | 72                     | 55            | 85         | N          | E                 | 58          | P                | P              | VG                 | P       | G         | --                   | n/a                 | 200                  |
| Radley                | 6            | 72                     | 68            | 83         | SL         | M                 | 57          | F                | P              | VG                 | F       | G         | --                   | n/a                 | 210                  |
| Scuba ♦               | 4            | 82                     | 87            | --         | SL         | E                 | 80          | P                | P              | F                  | F       | F         | F                    | n/a                 | 230                  |
| SW Parade ♦           | 4            | 97                     | 88            | 113        | SL         | M                 | 70          | F                | VG             | G                  | F       | F         | G                    | n/a                 | 220                  |
| TOLEDO ▲              | 4            | 87                     | 95            | --         | SL         | M                 | 70          | P                | P              | G                  | G       | F         | F                    | n/a                 | 280                  |

## Field Pea (Cont'd)

### Main characteristics of varieties

| Variety   | Years tested | — Yield as % of Affelta — |               |            | Leaf type* | Relative maturity | Vine Length (cm) | Ascochyta blight | Powdery mildew | Seed coat breakage | Resistance to |           | Seed coat dimpling** | Green seed coats*** | Seed weight (g/1000) |
|-----------|--------------|---------------------------|---------------|------------|------------|-------------------|------------------|------------------|----------------|--------------------|---------------|-----------|----------------------|---------------------|----------------------|
|           |              | 1,2 & South 3             | North 3 and 4 | Irrigation |            |                   |                  |                  |                |                    | Lodging       | Bleaching |                      |                     |                      |
| Venture ▶ | 4            | 97                        | 88            | --         | SL         | E                 | 75               | P                | P              | G                  | F             | F         | F                    | n/a                 | 220                  |

### Coloured Flower Varieties

|            |   |    |    |    |    |   |     |   |   |   |   |     |    |     |     |
|------------|---|----|----|----|----|---|-----|---|---|---|---|-----|----|-----|-----|
| CDC April  | 4 | 82 | 70 | -- | SL | L | 53  | F | P | G | F | n/a | -- | n/a | 140 |
| CDC Vienna | 5 | 86 | 81 | -- | SL | L | 61  | F | P | G | F | n/a | -- | n/a | 170 |
| Courier ▲  | 2 | 88 | 83 | -- | SL | M | 75  | F | P | F | P | n/a | G  | n/a | 210 |
| Whero      | 3 | 60 | 57 | -- | N  | L | 110 | P | P | G | P | n/a | -- | n/a | 210 |

### Forage Varieties

|            |   |     |    |    |   |   |    |   |    |   |   |     |    |    |     |
|------------|---|-----|----|----|---|---|----|---|----|---|---|-----|----|----|-----|
| CDC Sonata | 2 | 109 | 90 | -- | N | L | 85 | F | VG | F | F | n/a | F  | F  | 220 |
| Trapper    | 7 | 74  | 73 | -- | N | L | 95 | P | P  | F | P | n/a | -- | -- | 140 |

\* N = Normal leaf type, SL = Semi-leafless

\*\* Seed coat dimpling: Good = 0-5%; Fair = 6-20%.

\*\*\* Green seed coats: Good = 0-10%; Fair = 11-25%.

### Additional Information

For detailed production information, consult the *Pulse Production Manual* published by Saskatchewan Pulse Growers.

## Chickpea - Kabuli

### Main characteristics of varieties

| Variety     | Years tested | — Yield as % Sanford — |        | Leaf type* | Ascochyta blight | Height (cm) | Days to flower | Maturity† | Seed weight (g/1000) |
|-------------|--------------|------------------------|--------|------------|------------------|-------------|----------------|-----------|----------------------|
|             |              | Area 1                 | Area 2 |            |                  |             |                |           |                      |
| Sanford     | 6            | 100                    | 100    | U          | VP               | 49          | 56             | L         | 425                  |
| Amit (B-90) | 4            | 122                    | 124    | F          | F                | 46          | 55             | M         | 265                  |
| CDC Chico   | 6            | 132                    | 141    | F          | P                | 45          | 51             | E         | 265                  |
| CDC Diva    | 3            | 103                    | --     | U          | VP               | 43          | 52             | M         | 490                  |
| CDC Xena    | 5            | 115                    | 127    | U          | VP               | 44          | 52             | M         | 470                  |
| CDC Yuma    | 6            | 114                    | 114    | F          | P                | 45          | 53             | L         | 410                  |
| Dwelley     | 3            | 86                     | 88     | U          | VP               | 45          | 57             | VL        | 490                  |
| Evans       | 3            | 92                     | --     | U          | VP               | 50          | 53             | L         | 430                  |

## Chickpea - Desi

### Main characteristics of varieties

| Variety     | Years tested | Yield as % of Myles |        | Leaf type* | Ascochyta blight | Height (cm) | Days to flower | Maturity† | Seed weight (g/1000) | Seed shape** | Seed coat color*** |
|-------------|--------------|---------------------|--------|------------|------------------|-------------|----------------|-----------|----------------------|--------------|--------------------|
|             |              | Area 1              | Area 2 |            |                  |             |                |           |                      |              |                    |
| Myles       | 6            | 100                 | 100    | F          | F                | 41          | 50             | E         | 200                  | A            | T                  |
| CDC Anna    | 4            | 108                 | 108    | F          | F                | 42          | 52             | M         | 210                  | P            | T                  |
| CDC Desiray | 5            | 96                  | 104    | F          | F                | 40          | 49             | E         | 210                  | P            | LT                 |
| CDC Nika    | 4            | 97                  | 103    | F          | F                | 39          | 50             | M         | 320                  | P            | T                  |

\* Leaf type: F=fern; U=unifoliate

\*\* Seed shape: P=plump; A=angular

\*\*\* Seed coat color: T=tan; LT=light tan

† Maturity will be delayed in areas with a cool moist summer, especially on clay soils.

## Chickpea (Cont'd)

### Additional Information

Kabuli chickpea is best adapted to stubble or summerfallow production in the Brown soil zone. Desi chickpea is best adapted to summerfallow or stubble production in the Brown soil zone and stubble production in the Dark Brown soil zone. Chickpea is a deep-rooted crop, which is efficient in water uptake. Planting on clay soils, regardless of soil zone, increases the risk of prolonged vegetative growth and failure to mature on time. This risk can be reduced by planting on sandier, drought prone soils. Chickpea will tolerate light frosts in the spring. Desi varieties can be seeded in late April or early May. Kabuli varieties should be planted between early to mid May into a warm seedbed, preferably at least 10C average soil temperature at depth of seeding. This means that kabuli varieties are often later maturing.

**Ascochyta blight** can completely destroy a chickpea crop. Varieties listed in the recommendation tables differ in their resistance from "Very Poor" to "Poor" to "Fair"; none are

rated as "Good". To date, fern-leaf varieties tend to develop less ascochyta blight than unifoliate-leaf varieties. Susceptibility to the disease increases at the flowering and early podding stage. Field scouting for disease symptoms should begin in early June and continue throughout the growing season. Scouting should concentrate on areas where the risk of early infection is higher, e.g. fields adjacent to previous chickpea crops, where plant densities are higher, and in higher moisture areas. Scouting field margins is not sufficient. Fungicide application(s) may be necessary to protect crops. Disease risk is greater under conditions of frequent showers and/or heavy dew, and for varieties rated as Poor or Very Poor. Ascochyta blight is seed-borne and stubble-borne, therefore, growers should use seed with ascochyta blight levels as close to 0% as possible and plant chickpea in the same field no more than once in four years.

Chickpea requires planting equipment with a seed-feeding mechanism capable of handling large seeds. They are highly susceptible to seed damage and should be handled gen-

tly at all times. Seed treatment with Apron FL (metalaxyl) for seed rot diseases is strongly recommended for kabuli varieties, and may be required for desi varieties if conditions favour seed rotting diseases. Plant chickpea seeds 6 cm deep. Seeding rates vary with seed size; target 4 plants/ft<sup>2</sup>. Desi varieties are generally earlier maturing and higher yielding compared to the currently available kabuli varieties. The chickpea crop has stiff stems and can be swathed or straight cut at maturity. Thresh kabuli varieties gently to avoid seed splitting. All kabuli chickpea varieties listed have normal ("ram's head") seed shape, with the exception of **Amit (B-90)** which has a round seed shape.

Certified Seed of **CDC Yuma**, **CDC Xena**, **CDC Chilco**, and **CDC Deslray** will be available in 2002. Certified Seed of **CDC Diva**, **CDC Anna**, and **CDC Nika** will be available in 2003.

For more details on production consult the *Pulse Production Manual* published by the Saskatchewan Pulse Growers.

## Faba Bean

### Main characteristics of varieties

| Variety    | Years tested | Yield as % of Outlook— |                           | Maturity in days | Seed weight (g/1000) |
|------------|--------------|------------------------|---------------------------|------------------|----------------------|
|            |              | (Northeast) Dryland    | (South-central) Irrigated |                  |                      |
| Outlook    | 15           | 100                    | 100                       | 109              | 360                  |
| Aladin     | 15           | 104                    | 110                       | 112              | 400                  |
| CDC Blitz  | 6            | 101                    | 105                       | 109              | 410                  |
| CDC Fatima | 8            | 100                    | 104                       | 105              | 520                  |
| Cresta     | 3            | 92                     | 101                       | 105              | 630                  |
| Orion      | 6            | 95                     | 94                        | 103              | 350                  |
| Scirocco   | 3            | 96                     | 110                       | 107              | 550                  |

### Additional Information

Faba bean should be seeded early (late April to early May). It is best adapted to irrigated areas in the Dark Brown Soil Zone and the portion of the Black Soil Zone with the longest growing season.

Seed supplies of **CDC Blitz**, **Scirocco** and **Cresta** are limited.

Faba bean is a legume and thus is able to fix nitrogen from the air, provided the seed is inoculated with the proper bacteria prior to planting. Faba bean requires a specific strain of inoculum.

# Seed Facts

## Pedigreed Seed

Use certified seed regularly, especially when changing to a different variety. This assures that the seed has high genetic purity, high germination and is relatively free from weeds and other crop seeds. Some pedigreed seed may be paid for by an over-quota delivery of commercial grain. Ask your elevator agent or seed dealer for details.

## Reuse of Hybrid Variety Seed

Seed grown from a hybrid variety (regardless of crop or variety) should not be reused since a 20 to 25 percent yield reduction can occur in the next generation. This reduction is due to loss of hybrid vigour and possible occurrence of male-sterile plants. Lack of uniformity for maturity and quality traits will also occur.

## Seed Cleaning

Seed should be cleaned carefully to remove weed seeds, trash, small or broken kernels, ergot and sclerotia. **Not all seed-cleaning plants are equipped to clean grain to seed standards.**

## Seed Treatment

Use of seed from cereal crops infected with *Fusarium* may result in poor emergence. Such seed should be treated with a registered fungicide before planting. Use of infected seed may introduce *Fusarium* diseases into unaffected areas.

Smuts that attack wheat, barley, oat and rye can be controlled by chemical seed treatment. If seed from a crop in which bunt or smut was observed must be used for seed, seed treatment should be considered. **If the presence of smut is uncertain, varieties rated VERY POOR should be treated every year, those rated POOR every second year and those rated FAIR every third year.**

Only systemic fungicides will control true loose smut of barley and wheat, and stem smut of rye. Pathogens causing the other types of smut (covered, false loose, oat and bunt) are carried on the outside of the seed and can be controlled by non-systemic seed treatments containing maneb or thiram.

The virulent form of blackleg of canola is widespread in Saskatchewan. Seed treatment with a recommended fungicide can reduce the level of disease. Use of canola

seed commercially coated with an appropriate seed dressing is a convenient alternative to on-farm seed treatment.

Various fungicides have been registered for the control of seedling diseases. Flax, canola, rye and winter wheat seed should be treated to promote good seedling growth.

Wireworms, which attack all grain crops, and flea beetles, which attack canola and mustard, can be controlled by seed treatment with insecticides. At the time of publication, the insecticide lindane was no longer registered for flea beetle control, but alternatives are available.

**Read the label carefully before using any seed treatment or insecticide. Information on their use and recommended rates is found in the Guide to Crop Protection 2002 (SAF publication). Carryover stocks of treated seed should be tested for germination before using. Treated seed must not be delivered to an elevator or used for feed.**

## Seed-borne diseases of pulses

Pulse growers should use seed that has been tested for seed-borne diseases such as ascochyta, anthracnose and botrytis. Tolerances for seed infection vary with the pulse crop, the disease, weather conditions of the region and the availability of a seed treatment. If infection of the crop from sources other than seed is likely, using seed with low infection levels becomes less important.

In regions with frequent rainfall and high humidity, tolerances will be lower. Thus, for ascochyta blight of lentil use of seed with up to 5% seed infection is acceptable in the Brown and Dark Brown Soil Zones, but 0% is desirable in the Black Soil Zone. In pea, up to 10% seed infection with ascochyta is acceptable. In chickpea, 0% ascochyta seed infection is recommended because of the high rate of transmission of the disease from the seed to the emerging seedlings and its highly destructive nature. **A seed treatment for ascochyta-infected lentil seed is now available and is recommended if seed infection levels approach 5%.**

## Ergot

Ergot attacks all varieties of rye, triticale, wheat and barley, as well as most common grass species. Oat is rarely

attacked and all broadleaf species are immune. Grain containing 0.1% ergot is considered poisonous and should not be used for food. Details of this disease are found in *Ergot of Grains and Grasses* (AAFC Publ. 1438).

## Seed Inoculation

Legume crops obtain much of their nitrogen (N) requirement by forming a symbiotic association with soil bacteria called *Rhizobium*. These bacteria colonize the roots to form structures called nodules where they fix nitrogen for the legume plant. To enhance nitrogen fixation, the legume crop seed should be inoculated. **Use the proper strain of bacteria specific to that crop.** For further details, consult the *Pulse Production Manual* (Saskatchewan Pulse Growers).

## Damp and Frozen Seed

**Seed which is stored damp or tough may be low in germination.** Grain which will be used for seed should be dried, if necessary, soon after harvest. The drying temperature should be below 37C for batch driers and 43C for recirculating and continuous driers. Frozen grain should always be tested for germination by a seed-testing laboratory before planting. Such grain will frequently produce a high percentage of abnormal seedlings.

## Production Notes

All wheat classes, including durum and triticale, are susceptible to wheat midge. Farmers in infested areas should be prepared to spray fields with recommended insecticides if necessary. Refer to the SAF publication *Orange Wheat Blossom Midge*.

Residue of infected crops may harbour disease pathogens. Seeding into stubble of the same crop kind will increase disease risk, particularly in higher rainfall areas.

# Breeding Institutions and Seed Distributors of Varieties Listed in this Publication

| Crop kind,<br>Class & Variety      | Breeding Institution    | Distributor          | Crop kind,<br>Class & Variety                                           | Breeding Institution | Distributor |
|------------------------------------|-------------------------|----------------------|-------------------------------------------------------------------------|----------------------|-------------|
| <b>Wheat</b>                       |                         |                      | <b>AC Certa</b>                                                         |                      |             |
| <b>Bread Wheat</b>                 |                         |                      | <b>AC Copia</b>                                                         |                      |             |
| 5500HR                             | Agripro/Agricare United | Proven Seed          | <b>Bobcat</b>                                                           |                      |             |
| 5600 HR                            | Agripro/Agricare United | Proven Seed          | <b>Pika</b>                                                             |                      |             |
| AC Abbey                           | AAFC (Swift Current)    | Canterra Seeds       | <b>Pronghorn</b>                                                        |                      |             |
| AC Barrie                          | AAFC (Swift Current)    | SeCan Members        | <b>Sandro</b>                                                           |                      |             |
| CDC Bounty                         | U of S - CDC            | Canterra Seeds       | <b>Barley</b>                                                           |                      |             |
| AC Cadillac                        | AAFC (Swift Current)    | QAS                  | <b>Malting</b>                                                          |                      |             |
| Columbus                           | AAFC (Winnipeg)         | SeCan Members        | <b>B1602</b>                                                            |                      |             |
| AC Cora                            | AAFC (Winnipeg)         | SeCan Members        | <b>CDC Battleford</b>                                                   |                      |             |
| AC Domain                          | AAFC (Winnipeg)         | SeCan Members        | <b>CDC Copeland</b>                                                     |                      |             |
| AC Eatonia                         | AAFC (Swift Current)    | Proven Seed          | <b>Excel</b>                                                            |                      |             |
| AC Elsa                            | AAFC (Swift Current)    | SeCan Members        | <b>CDC Kendall</b>                                                      |                      |             |
| AC Intrepid                        | AAFC (Swift Current)    | Canterra Seeds       | <b>Harrington</b>                                                       |                      |             |
| Katepwa                            | AAFC (Winnipeg)         | SeCan Members        | <b>Legacy</b>                                                           |                      |             |
| Laura                              | AAFC (Swift Current)    | SeCan Members        | <b>AC Metcalfe</b>                                                      |                      |             |
| AC Majestic                        | AAFC (Winnipeg)         | SeCan Members        | <b>Manley</b>                                                           |                      |             |
| McKenzie                           | Sask. Wheat Pool        | SWP/Agricare         | <b>Merit</b>                                                            |                      |             |
| Prodigy                            | Sask. Wheat Pool        | SWP/Agricare         | <b>Newdale</b>                                                          |                      |             |
| AC Splendor                        | AAFC (Winnipeg)         | SeCan Members        | <b>Robust</b>                                                           |                      |             |
| AC Superb                          | AAFC (Winnipeg)         | SeCan Members        | <b>CDC Select</b>                                                       |                      |             |
| CDC Teal                           | U of S - CDC            | QAS                  | <b>CDC Sisler</b>                                                       |                      |             |
| <b>Canada Prairie Spring Wheat</b> |                         |                      | <b>Stein</b>                                                            |                      |             |
| 5700PR                             | Agripro/Agricare United | Proven Seed          | <b>CDC Stratus</b>                                                      |                      |             |
| AC 2000                            | AAFC (Swift Current)    | SeCan Members        | <b>CDC Yorkton</b>                                                      |                      |             |
| AC Crystal                         | AAFC (Swift Current)    | SeCan Members        | <b>AC Bountiful</b>                                                     |                      |             |
| AC Foremost                        | AAFC (Swift Current)    | SeCan Members        | <b>Feed</b>                                                             |                      |             |
| AC Karma                           | AAFC (Swift Current)    | SeCan Members        | <b>Brier</b>                                                            |                      |             |
| AC Taber                           | AAFC (Swift Current)    | SeCan Members        | <b>CDC Dolly</b>                                                        |                      |             |
| AC Vista                           | AAFC (Swift Current)    | QAS                  | <b>CDC Fleet</b>                                                        |                      |             |
| <b>Canada Western Extra Strong</b> |                         |                      | <b>AC Harper</b>                                                        |                      |             |
| Amazon                             | University of Manitoba  | Canterra Seeds       | <b>CDC Helgason</b>                                                     |                      |             |
| AC Corinne                         | AAFC (Winnipeg)         | QAS                  | <b>AC Lacombe</b>                                                       |                      |             |
| AC Glenavon                        | AAFC (Winnipeg)         | SeCan Members        | <b>AC Rosser</b>                                                        |                      |             |
| Glenlea                            | University of Manitoba  | Public               | <b>Stander</b>                                                          |                      |             |
| Laser                              | University of Alberta   | Canterra Seeds       | <b>Trochu</b>                                                           |                      |             |
| <b>Durum</b>                       |                         |                      | <b>Xena</b>                                                             |                      |             |
| AC Avonlea                         | AAFC (Swift Current)    | QAS                  | <b>Hulless</b>                                                          |                      |             |
| Kyle                               | AAFC (Swift Current)    | SeCan Members        | <b>AC Bacon</b>                                                         |                      |             |
| AC Melita                          | AAFC (Winnipeg)         | SeCan Members        | <b>CDC Dawn</b>                                                         |                      |             |
| AC Morse                           | AAFC (Winnipeg)         | SeCan Members        | <b>Falcon</b>                                                           |                      |             |
| AC Napoleon                        | AAFC (Winnipeg)         | Canterra Seeds       | <b>CDC Freedom</b>                                                      |                      |             |
| AC Navigator                       | AAFC (Swift Current)    | Sask. Wheat Pool     | <b>CDC Gainer</b>                                                       |                      |             |
| Plenty                             | U of S - CDC            | SeCan Members        | <b>HB805</b>                                                            |                      |             |
| Sceptre                            | U of S - CDC            | SeCan Members        | <b>CDC McGwire</b>                                                      |                      |             |
| <b>Soft White Spring Wheat</b>     |                         |                      | <b>Peregrine</b>                                                        |                      |             |
| Fielder                            | USDA/AAFC (Lethbridge)  | Public               | <b>Phoenix</b>                                                          |                      |             |
| AC Nanda                           | AAFC (Lethbridge)       | QAS                  | <b>CDC Silky</b>                                                        |                      |             |
| AC Phil                            | AAFC (Lethbridge)       | Proven Seed          | <b>CDC Speedy</b>                                                       |                      |             |
| AC Reed                            | AAFC (Lethbridge)       | SeCan Members        | <b>Tercel</b>                                                           |                      |             |
| <b>Hard White Spring Wheat</b>     |                         |                      | <b>Intensive Management</b>                                             |                      |             |
| AC Ivory                           | AAFC (Winnipeg)         | QAS                  | <b>CDC Bold</b>                                                         |                      |             |
| AC Snowbird                        | AAFC (Winnipeg)         | QAS                  | <b>CDC Earl</b>                                                         |                      |             |
| <b>Winter Wheat</b>                |                         |                      | <b>Kasota</b>                                                           |                      |             |
| AC Bellatrix                       | AAFC (Lethbridge)       | QAS                  | <b>Mahigan</b>                                                          |                      |             |
| CDC Clair                          | U of S - CDC            | SeCan Members        | <b>Niska</b>                                                            |                      |             |
| CDC Falcon                         | U of S - CDC            | SeCan Members        | <b>CDC Thompson</b>                                                     |                      |             |
| CDC Harrier                        | U of S - CDC            | SeCan Members        | <b>Vivar</b>                                                            |                      |             |
| CDC Kestrel                        | U of S - CDC            | SeCan Members        | <b>AC</b>                                                               |                      |             |
| CDC Osprey                         | U of S - CDC            | Canterra Seeds       | <b>AAFC</b>                                                             |                      |             |
| CDC Ptarmigan                      | U of S - CDC            | Mercer Seeds Ltd.    | <b>CDC</b>                                                              |                      |             |
| CDC Raptor                         | U of S - CDC            | SeCan Members        | <b>AAFRD</b>                                                            |                      |             |
| <b>Winter Rye</b>                  |                         |                      | <b>U</b>                                                                |                      |             |
| AC Remington                       | AAFC (Swift Current)    | Proven Seed          | <b>U of S</b>                                                           |                      |             |
| Danko                              | University of Alberta   | Agricare             | <b>USDA</b>                                                             |                      |             |
| Kodiak                             | AAFC (Swift Current)    | SeCan Members        | <b>QAS</b>                                                              |                      |             |
| Prima                              | AAFC (Swift Current)    | Proven Seed/Canterra | <b>LCSI</b>                                                             |                      |             |
| AC Rifle                           | AAFC (Swift Current)    |                      | <b>SWP</b>                                                              |                      |             |
| <b>Spring Rye</b>                  |                         |                      | <b>as a prefix to variety names Agriculture Canada</b>                  |                      |             |
| Gazelle                            | U of S                  | Public               | <b>(Agriculture and Agri-Food Canada)</b>                               |                      |             |
| <b>Triticale</b>                   |                         |                      | <b>- Agriculture and Agri-Food Canada</b>                               |                      |             |
| AC Alta                            | AAFC (Swift Current)    | Progressive Seeds    | <b>- Crop Development Centre</b>                                        |                      |             |
| AC Ultima                          | AAFC (Swift Current)    | QAS                  | <b>- Alberta Agriculture Food and Rural Development, Lacombe, Alta.</b> |                      |             |
|                                    |                         |                      | <b>- University</b>                                                     |                      |             |
|                                    |                         |                      | <b>- University of Saskatchewan, Saskatoon</b>                          |                      |             |
|                                    |                         |                      | <b>- United States Department of Agriculture</b>                        |                      |             |
|                                    |                         |                      | <b>- Quality Assured Seeds</b>                                          |                      |             |
|                                    |                         |                      | <b>- Limagrain Canada Seeds Inc.</b>                                    |                      |             |
|                                    |                         |                      | <b>- Saskatchewan Wheat Pool</b>                                        |                      |             |

**Oat**

AC Antione  
 AC Assiniboia  
 CDC Boyer  
 Boudrias  
 Calibre  
 CDC Dancer  
 Derby  
 AC Gwen  
 AC Kaufmann  
 AC Medallion  
 AC Morgan  
 CDC Pacer  
 AC Pinnacle  
 AC Rebel  
 AC Ronald  
 SW Exactor  
 Triple Crown  
 CDC Baier  
 CDC Bell  
 AC Murphy

AAFC (Ottawa)  
 AAFC (Winnipeg)  
 U of S - CDC  
 AAFC (Lacombe)  
 U of S - CDC  
 U of S - CDC  
 AAFC (Winnipeg)  
 AAFC (Lacombe)  
 AAFC (Winnipeg)  
 AAFC (Lacombe)  
 U of S - CDC  
 AAFC (Winnipeg)  
 AAFC (Winnipeg)  
 AAFC (Winnipeg)  
 Svalof Weibull AB  
 Svalof Weibull AB  
 U of S - CDC  
 U of S - CDC  
 AAFC (Lacombe)

Cargill Seed  
 Proven Seed  
 SeCan Members  
 QAS  
 SeCan Members  
 Cargill Seed  
 Proven Seed  
 SeCan Members  
 Cargill Seed  
 SeCan Members  
 QAS  
 QAS  
 Canterra Seeds  
 SeCan Members  
 QAS  
 ProMark Seed  
 QAS  
 Agricare United  
 SeCan Members

SeCan Members  
 Cargill Seed  
 Cargill Seed  
 IMC Cargill  
 Cargill Seed  
 LIBred  
 Prairie Seeds  
 LIBred  
 LIBred

Aventis  
 Aventis  
 Advanta Seeds  
 Advanta Seeds  
 Advanta Seeds  
 Advanta Seeds  
 Advanta Seeds  
 Canterra Seeds  
 Canterra Seeds  
 Canterra Seeds  
 Monsanto Canada  
 Cargill Seed  
 Monsanto Canada  
 Agricare United  
 Proven Seed  
 Proven Seed  
 Proven Seed  
 Proven Seed  
 Proven Seed  
 Proven Seed  
 Proven Seed

QAS  
 ProMark, Northstar,  
 Prairie  
 LCSI  
 SeCan Members  
 SeCan Members  
 Seed Link Inc.  
 QAS

QAS  
 Agricare  
 ProMark Seed  
 ProMark Seed  
 ProMark, Northstar,  
 Prairie  
 Sask. Wheat Pool  
 Sask. Wheat Pool  
 Sask. Wheat Pool  
 Sask. Wheat Pool  
 Sask. Wheat Pool  
 Sask. Wheat Pool  
 Sask. Wheat Pool  
 SWP/Agricare  
 QAS  
 ProMark Seed  
 SWP/Agricare  
 Federated Co-op

**Canola**

**Argentine**  
 AC Excel  
 220  
 CLAVET  
 IMC108RR  
 Magellan  
 279  
 499RR  
 Agassiz  
 Ascent  
 561RR  
 799RR  
 2573 (LL)  
 2663 (LL)  
 HYLITE 225RR  
 215CL  
 243CL  
 Hyola 401  
 Hyola 454RR  
 Canterra1867(RR)  
 1492  
 1812 (RR)  
 3235 (RR)  
 3345 (RR)  
 34-55 (RR)  
 Dawn (RR)  
 45A51 (RR)  
 45A54 (RR)  
 45A55 (RR)  
 45A71 (CL)  
 45A77 (CL)  
 46A65  
 46A73 (CL)  
 46A76 (CL)  
 AC Tristar (TT)  
 BIANCA II  
 Heritage (RR)

AAFC (Saskatoon)  
 NPZ-Svalof Weibull AB  
 Svalof Weibull AB  
 IMC Cargill  
 IMC Cargill  
 DSV Canada  
 DSV Canada  
 DSV Canada  
 DSV Canada  
 DSV Canada  
 DSV Canada  
 Aventis  
 Aventis  
 LCSI  
 Advanta Seeds  
 Advanta Seeds  
 Advanta Seeds  
 Advanta Seeds  
 Advanta Seeds  
 Canterra Seeds  
 Canterra Seeds  
 Canterra Seeds  
 Monsanto Canada  
 Monsanto Canada  
 Monsanto Canada  
 Monsanto Canada  
 Pioneer Hi-Bred  
 Pioneer Hi-Bred  
 Pioneer Hi-Bred  
 Pioneer Hi-Bred  
 Pioneer Hi-Bred  
 Pioneer Hi-Bred  
 Pioneer Hi-Bred  
 Pioneer Hi-Bred  
 Pioneer Hi-Bred  
 AAFC (Saskatoon)  
 Agriprogress Inc.  
 LCSI

Cyclone  
 DS-Roughrider(RR)  
 EAGLE  
 Foremost  
 HY-Per Star 100  
 Sentry  
 Hudson  
 601  
 IMPULSE  
 OAC DYNAMITE  
 Skyhawk

DLF-Trifolium  
 Danisco Seeds  
 Svalof Weibull AB  
 DLF-Trifolium  
 NPZ/LEMBKE  
 U of Manitoba  
 Danisco Seeds  
 NPZ/LEMBKE  
 Svalof Weibull AB  
 U of Guelph  
 DLF-Trifolium

Admire (RR)  
 Conquest (RR)  
 HI-Q  
 Kelsey (RR)  
 LoLinda  
 Q2  
 SP Armada  
 SW 5001  
 SW ARROW (RR)  
 SW Gladiator  
 SW RazoR (RR)  
 SW RideR (RR)  
 Thunder

Sask. Wheat Pool  
 U of Alberta  
 University of Alberta  
 U. of Alberta  
 Bonis and Company  
 U. of Alberta  
 Sask. Wheat Pool  
 Svalof Weibull AB  
 Svalof Weibull AB  
 Svalof Weibull AB  
 Svalof Weibull AB  
 Svalof Weibull AB  
 DSV Canada

**TRAILBLAZER LCSI****Polish**

41P55  
 1000 SP  
 1007  
 AC Boreal  
 CASH  
 FAIRVIEW  
 Hysyn 110  
 Hysyn 111  
 Hysyn 120 CS  
 AC Parkland  
 Reward  
 AC Sunbeam  
 WESTWIN

**Flax**

CDC Arras  
 CDC Bethune  
 AC Camduff  
 AC Emerson  
 Flanders  
 AC Hanley  
 AC Lightning  
 Linola™989  
 Linola™ 1084  
 AC Linora  
 AC McDuff  
 NorLin  
 CDC Normandy  
 Somme  
 Taurus  
 CDC Valour  
 Vimy  
 AC Watson

**Mustard**

**Brown**  
 commercial  
 Duchess

**Oriental**

Cutlass  
 Forge  
 Lethbridge 22A  
 AC Vulcan

**Yellow**

AC Base  
 Gisilba  
 Ochre  
 AC Pennant  
 Tilney  
 Viscount

**Sunflower**

63A21  
 63A70  
 IS 6111  
 IS 8048  
 P6150  
 SF 187  
 SF 270

**Field Pea**

DS Admiral  
 AC Advantage  
 Alfetta  
 CDC April  
 SW Bravo  
 SW Capri  
 Carneval  
 Carrera  
 Cascade  
 COBRA  
 Courier  
 CROMA  
 Delta  
 DS Dominator  
 Eclipse  
 Eiffel  
 Espace  
 GRANDE  
 CDC HANDEL  
 Highlight  
 INTEGRA

Pioneer Hi-Bred  
 Advanta Seeds  
 Svalof Weibull AB  
 AAFC (Saskatoon)  
 Svalof Weibull AB  
 Svalof Weibull AB  
 Advanta Seeds  
 Advanta Seeds  
 Advanta Seeds  
 AAFC (Saskatoon)  
 U of Manitoba  
 AAFC (Beaverlodge)  
 Svalof Weibull AB

U of S - CDC  
 U of S - CDC  
 AAFC (Morden)  
 AAFC (Morden)  
 U of S - CDC  
 AAFC (Morden)  
 AAFC (Morden)  
 CSIRO/UGG  
 CSIRO/UGG  
 AAFC (Morden)  
 AAFC (Morden)  
 AAFC (Morden)  
 U of S - CDC  
 U of S - CDC  
 Cebeco Zaden  
 U of S - CDC  
 U of S - CDC  
 AAFC (Morden)

Proven Seed

AAFC (Saskatoon)  
 Colman's of Norwich  
 AAFC (Saskatoon)  
 AAFC (Saskatoon)

AAFC (Saskatoon)  
 Kurt Behm GMBH

AAFC (Saskatoon)  
 AAFC (Saskatoon)  
 Colman's of Norwich  
 Colman's of Norwich/UGG

Pioneer Hi-Bred  
 Pioneer Hi-Bred  
 Interstate Seeds  
 Advanta Seeds  
 Pioneer Hi-Bred  
 Cargill Seed  
 Cargill Seed

Danisco Seeds  
 (AAFC Morden)  
 Cebeco Zaden  
 U of S - CDC  
 Svalof Weibull AB  
 Svalof Weibull AB  
 Svalof Weibull AB  
 Cebeco Zaden  
 N.Z. Crop & Food  
 Danisco Seeds  
 N.Z. Crop & Food  
 Cebeco Zaden  
 Cebeco Zaden  
 Danisco Seeds  
 Cebeco Zaden  
 Danisco Seeds  
 Cebeco Zaden  
 Svalof Weibull AB  
 U of S - CDC  
 Svalof Weibull AB  
 Cebeco Zaden

**Northstar Seed  
Prairie Seeds**

Proven Seed  
 Canterra Seeds  
 Canterra Seeds  
 SeCan Members  
 ProMark Seed  
 Sask. Wheat Pool  
 Advanta Seeds  
 Advanta Seeds  
 Cargill Seed  
 SeCan Members  
 SeCan Members  
 SeCan Members  
 LiBred

QAS  
 SeCan Members  
 SeCan Members  
 SeCan Members  
 SeCan Members  
 Canterra Seeds  
 Proven Seed  
 Proven Seed  
 SeCan Members  
 Proven Seed  
 SeCan Members  
 SeCan Members  
 QAS  
 SeCan Members  
 SeCan Members  
 Sask. Wheat Pool

Trade  
 Proven Seed

Trade  
 Sask. Wheat Pool  
 Trade  
 Sask. Wheat Pool

Northern Sales/  
 Klempauer Seeds  
 Trade  
 Sask. Wheat Pool  
 Proven Seed  
 Proven Seed

Pioneer Hi-Bred  
 Pioneer Hi-Bred  
 Advanta Seeds  
 Advanta Seeds  
 Pioneer Hi-Bred  
 Cargill Seed  
 Cargill Seed

QAS  
 SeCan Members  
 QAS  
 QAS  
 Agricare United  
 Canterra Seeds  
 Sask. Wheat Pool  
 Canseed Ltd.  
 Canterra Seeds  
 Canterra Seeds  
 Canterra Seeds  
 QAS  
 QAS  
 QAS  
 SeCan Members  
 St. Denis Seeds AB  
 Sask. Wheat Pool  
 Sask. Pulse Growers  
 ProMark Seed  
 St. Denis Seeds AB

